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The OIL AND GAS JOURNAL

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TULSA, OKLAHOMA JUNE 27, 1935

What his HORSE meant to the TEXAS COMANCHE

THE COMANCHE
"lived on horseback"

The Comanche of West Texas, according to George Catlin, noted traveler among the Indians, were the most extraordinary horsemen to be found on the continent.

"Amongst their feats," he wrote, "there is one that has astonished me more than anything of the kind I have ever seen—a stratagem practiced by every young man, by which he is able to drop his body upon the side of his horse, effectually screened from his enemies, with his heel hanging over the horse's back. . . . In this wonderful condition he will hang whilst his horse is at fullest speed, carrying with him his bow and his shield and his long spear, all or either of which he will wield upon his enemy, rising and shooting his arrows over his horse's back, or with equal ease under the horse's neck. . . . I found that a short hair halter was passed around under the neck of the horse and both ends tightly braided into the mane, leaving a loop to hang against the breast, which being caught in the hand makes a sling into which the elbow falls, taking the weight of the body on the middle of the upper arm."

-his *UNION WIRE LINES* mean to the TEXAS OIL MAN

Without his horse, the Texas Comanche could never have made his long and effective stand on the West Texas frontier. The Comanche "lived on his horse"—could be no better than his horse.

The driller for oil can be no better than his wire lines. We believe that is why UNION Lines—built extra-tough by oil men for the extra-hard usage of oil field service—have become the *leaders* in Texas oil fields.

This photo was taken at Neville G. Penrose & Rowan Drilling Company "Kloh No. 1", Odessa, Texas. Left to right, the men are: (In front) Chick Brummett, tool dresser; Paul Critton, driller. (In rear) Mike O'Neal, driller; C. H. Cloyd, tool dresser; H. R. Cutlip, Union Wire Rope Corp.; D. R. Wilson, Rowan Drilling Co.; Joe Collins, driller.

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THE OIL AND GAS JOURNAL

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OIL MAN'S CALENDAR

June

24-28—Detroit, Mich., American Society for Testing Materials, annual meeting, Book Cadillac Hotel.

July

5—Los Angeles, Calif., California Natural Gasoline Association.

18—South Dakota Independent Oil Men's Association, place to be named later.

August

1—Los Angeles, Calif., California Natural Gasoline Association.

(?)—American Petroleum Equipment Suppliers' Association, place to be named later.

19-24—San Francisco, Calif., American Chemical Society.

September

4-5—Louisville, Ky., Kentucky Petroleum Marketers Association.

18-20—Hot Springs, Ark., North American Gasoline Tax Conference.

18-20—Atlantic City, N. J., National Petroleum Association, annual meeting, Hotel Traymore.

October

10-12—Houston, Tex., mid-year meeting of Petroleum Division of A.I.M.E.

14-18—Louisville, Ky., National Safety Council, twenty-fourth annual safety congress.

14-18—Atlantic City, N. J., American Gas Association, Manufacturers Division.

14-19—Oklahoma City, Okla., National Tax Association, Oklahoma Biltmore Hotel.

16-17—Mexico City, Mexico, mid-year meeting A.A.P.G. and seventh annual meeting, San Antonio section, A.A.P.G.

20-26—Paris, France, International Congress of Mining, Metallurgy and Applied Geology.

24-25—Toledo, Ohio, Ohio Petroleum Marketers Association, Annual Fall Conference and Golf Tournament.

November

4-5—Dallas, Tex., I.P.A.A., annual convention.

11-14—Los Angeles, Calif., American Petroleum Institute, sixteenth annual meeting, Biltmore Hotel.

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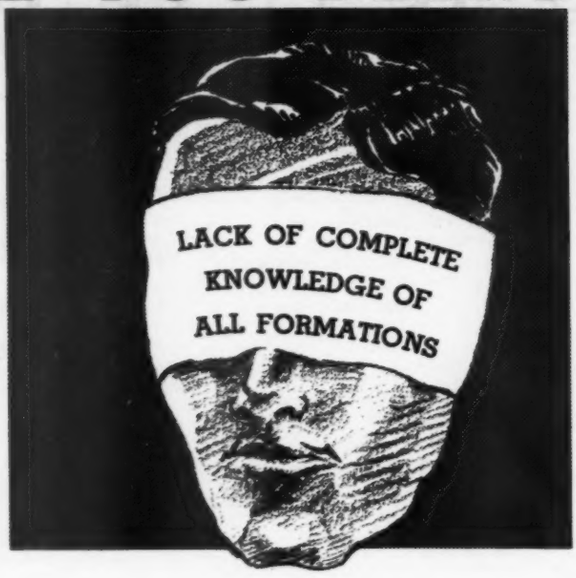

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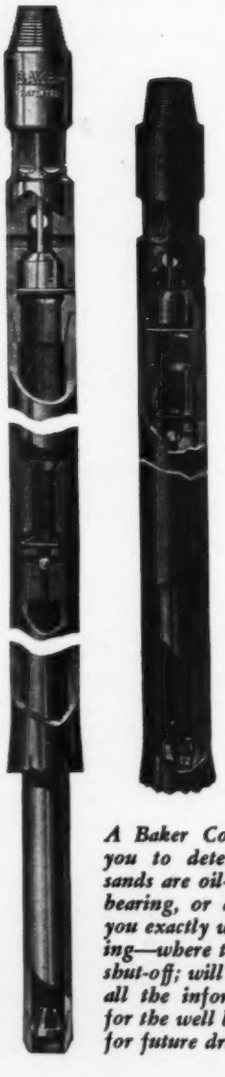

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Soft Spots in Crude Situation of Local Import With General Market Still Showing Strength

By ANDREW M. ROWLEY

SOFT spots which have developed in the crude oil production situation are fairly local in character now and while of especial importance to operators in the areas affected they do not at this time threaten the stability of the crude oil price structure of the country as a whole. In fact, conditions in the main continue firm with indications of continued strength.

Producers in California are confronted with a critical situation due to overproduction and the sale of crude oil at prices below posted schedules. While 95 per cent of all producers in that state are abiding and will continue to abide by existing voluntary curtailment programs, the remainder, representing a small minority, through overproduction and the sale of crude at lower prices than those being paid by the major purchasers may bring a reduction in crude oil prices in California. Such a situation is not new in that State.

The industry as a whole is not worried about the situation in California. Experience has shown California operators are capable of solving their own problems before the situation became so bad it would affect conditions elsewhere in the industry. It may be necessary to reduce materially crude oil prices in California but such action, should it come, would have no bearing on conditions in other areas and, undoubtedly, would not last long in California.

Michigan operators, realizing production in that state has been mounting steadily, are co-operating in efforts to insure stabilization of markets there.

The gasoline market, probably the most important factor in the crude oil market situation as a whole, continues strong with indications of continued firmness. Jobbers who have been holding off purchases until they knew definitely whether existing Federal taxes would be continued after June 20 are expected to enter the market to fill low storage and better motoring weather in many areas has still further stimulated consumption, already considerably above that of last year—the high record year in history as far as domestic gasoline consumption is concerned.

Field developments continue to reflect the desire for greater crude oil reserves. The Ohio Oil Company's completion four miles south of production in Lea County, New Mexico, which flowed 248 barrels an hour under back pressure and through a partly closed valve, is regarded as the outstanding discovery of the year in New Mexico. The fact there are 102 rigs up, locations made and wells drilling in the Fitts Pool in Oklahoma alone indicates the activity resulting from good returns. The completion of a 250-barrel well 1¼ miles north of the Crystal area discovery is of especial importance in drilling programs in Michigan.

Crude Oil Production in the United States

Estimated daily average production for the week ending June 22, 1935, a comparison with previous week and the Federal recommendations follow:

	June 22	Federal recommendation June	June 15
Oklahoma—			
Oklahoma City	149,125	.....	168,725
Seminole-St. Louis	103,225	.....	104,425
Remainder of State	264,675	.....	259,075
Total Oklahoma	517,025	514,200	532,225
East Texas—			
Lathrop	167,838	.....	167,739
Kilgore	156,556	.....	154,328
Joiner	154,298	.....	153,676
Total East Texas	478,692	.....	475,743
West Texas	153,954	.....	146,534
North Central Texas	84,657	.....	91,907
Texas Panhandle	63,425	.....	55,772
East Central Texas	49,723	.....	49,465
Gulf Coast—Texas	183,524	.....	182,346
Southwest Texas	59,617	.....	59,868
Total State of Texas	1,073,592	1,059,300	1,061,635
Kansas	148,325	154,300	148,875
North Louisiana	22,815	.....	22,965
Gulf Coast—Louisiana	115,850	.....	115,208
Total Louisiana	138,665	132,300	138,173
Arkansas	30,885	30,700	30,770
Eastern Fields (except Michigan)	104,000	103,700	105,000
Michigan	43,444	36,800	42,919
Rocky Mountain area	107,060	107,000	105,540
California—			
Santa Fe Springs	39,750	.....	40,750
Long Beach	75,000	.....	75,250
Mountain View	24,000	.....	23,500
Elwood	13,750	.....	14,000
Kettleman Hills	72,500	.....	59,500
Remainder of State	355,000	.....	360,150
Total California	580,000	512,700	573,150
Total United States	2,742,976	2,651,000	2,738,287

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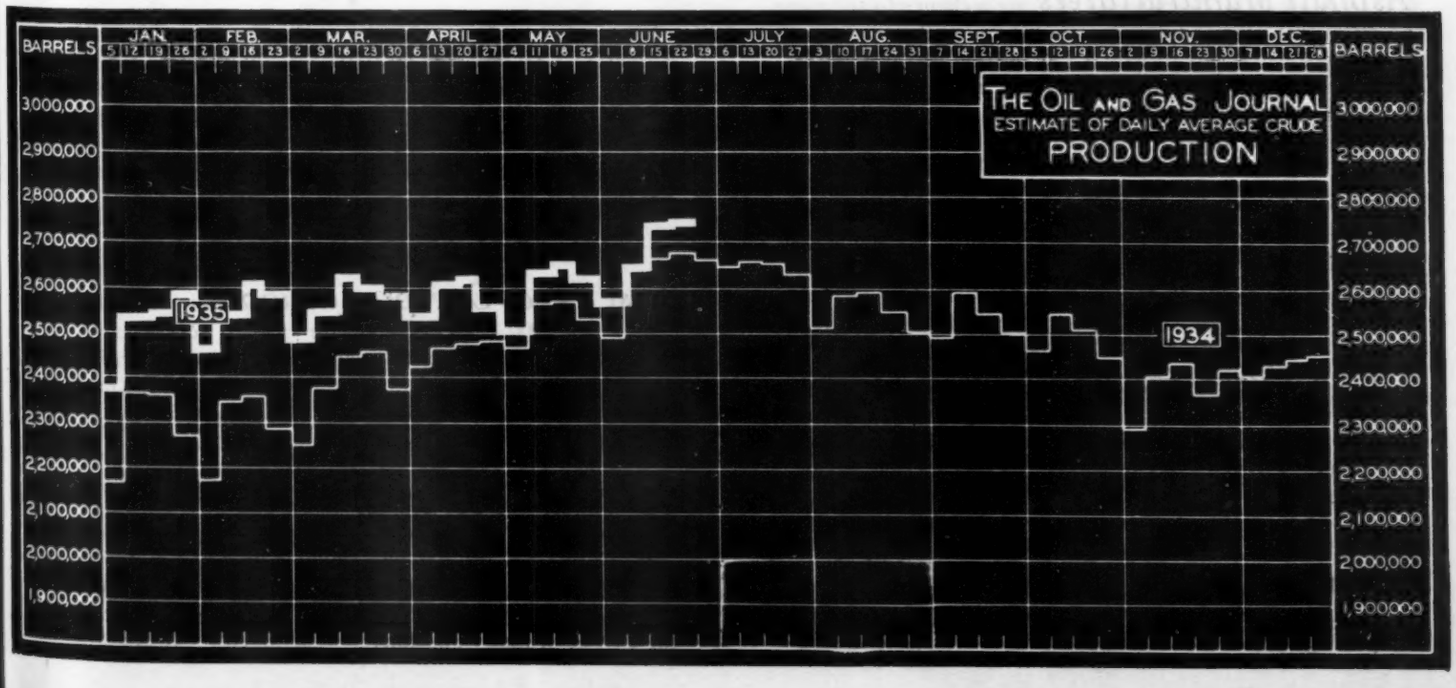


The Bulletin Board

Secretary Ickes, in a letter to the P. and C. Commitee, states "It seems to me very wise that such a committee (P. and C.) be continued in existence by the industry in order to advise and aid the Government in the administration of the present act (Skeletonized NRA). Should this not be done it would be necessary to appoint a committee from the industry for this purpose." Unless the P. and C. Committee decides to continue, it will disband July 21.

•

Gulf Coast Refineries are operating close to capacity with much new construction under way to increase the size and scope of the plants, including solvent plants, a combination cracking unit, a chemical plant and asphalt units. Other plants are undergoing reconditioning, modernization and substantial addition to capacities.

•

Flooding Methods, so successful in the Bradford Field in Pennsylvania, will be used in the stripper well section of northeastern Oklahoma by the Forest Oil Corp., largest oil producer in Bradford, which has purchased between 4,000 and 5,000 acres of old productive leases and several hundred wells in that area.

•

Alcohol-Gasoline Blends will not be urged upon motorists of this country as an important factor in solving farm problems by the Chemical Foundation, Inc., at least for the time being. That organization declined a challenge issued by the American Petroleum Institute for a jointly financed impartial investigation of merits of blends. Instead there has been formed the Farm Chemurgic Council to effect a closer working arrangement among farmers, industry and science.

•

Asphalt Manufacturers see a chance to sell more products this year and are stressing the importance of popularizing asphalt roads to gain a fair portion of the $800,000,000 federal appropriation for highway use under the relief program.

•

Motor Vehicles operated by the petroleum industry, including tank trucks, are involved in fewer accidents than those of any other commercial fleet operator, according to extensive data compiled by the National Safety Council.

•

Two Natural Gasoline Plants in the Gulf Coast will resume operation due to an agreement whereby gas will be taken ratably from local fields based upon 320-acre units, the residue gas to be taken by a pipe line for general use.

•

Refiners in the United States sold more than $10,000,000 worth of road oil last year, an increase of 20 per cent over the previous year.

Automobile Motor Knocks may be detected by a newly developed electro-accoustical instrument which will go far in aiding the development of more suitable motor fuels and which promises to revolutionize the design of motor cylinder heads.

•

Federal Oil Control legislation has not, up to this time, been placed on the "must" list by President Roosevelt and the feeling is spreading in Washington such a law will not be enacted at this session of Congress. There would be very little opposition to legislation ratifying the interstate compact.

•

Solution of its own problems rather than looking to government for more than passing aid was urged upon the oil industry by T. P. Thompson, Jr., president of the Pennsylvania Grade Crude Oil Association, at the annual meeting of the organization which adopted a resolution opposing the Wagner labor bill.

•

Marketing Problems are being considered at a meeting in Washington called by the American Petroleum Institute, those in attendance including members of the marketing sub-committee of the Planning and Coordination Committee and others prominent in marketing.

•

Important Expansion of its operations in Canada has been announced by the Standard Oil Company of California which will construct a $750,000 refinery near Vancouver with docks and loading facilities. The company purchased a string of service stations in Western Canada.

•

Cable Tool Drilling is becoming an important factor in the development of sections of the East Texas Field where bottom hole pressures are lower than the general field average. Development practices calculated to solve problems encountered and eliminate any possibility of shutting off producing horizons are being followed in the field.

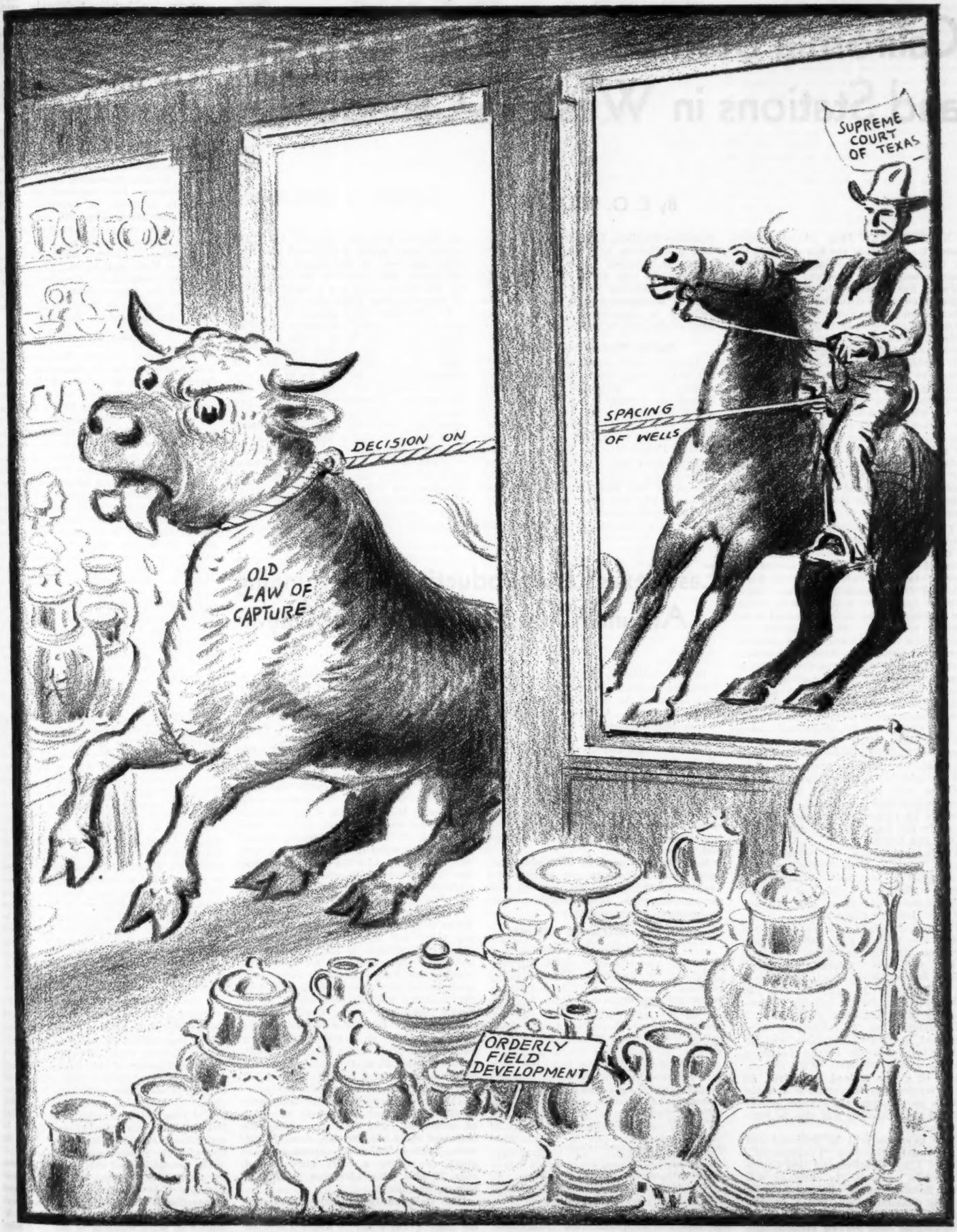
•

East Texas Overproduction last week is estimated at 29,000 barrels daily with runs to refineries in the field averaging 48,000 barrels daily. The state authorities are carrying out their program of confiscating all crude oil produced in excess of allowables.

•

Motor Fuel Volatility may reach an optimum at which the refiner, automobile manufacturer and motorist receive greatest benefits from an economic standpoint and beyond which excessive costs may accrue totaling 30 per cent of the cost of ordinary gasoline.

The Bull in the China Shop



—Drawn Exclusively for The Oil and Gas Journal.

California Standard to Build Refinery and Stations in Western Canada

By C. O. WILLSON

NEW YORK, June 24.—Announcement this week that the Standard Oil Co. of California had purchased a chain of independent filling stations in western Canada has served to further center attention on the expanding operations of that company which has materially strengthened its operating position outside the United States during the past three years. The new operations are to be carried on under the name of the Standard Oil Co. of British Columbia, marking the entry of the Standard name in Canadian marketing operations. None of the other Standard companies is a direct factor in Canadian refining and marketing operations with the exception of the Standard Oil Co. (New Jersey) through Imperial Oil, Ltd., a subsidiary, for many years the largest company in Canada, refining and distributing more than 50 per cent of the products sold in Canada.

The California Standard has also announced it will build a 2,500-bbl. refinery at Burnaby, near Vancouver, on the west coast of Canada, in order to take advantage of tax laws which favor products obtained from domestic refining operations as opposed to a situation in which the finished products are imported from outside refineries. This situation accounted for the construction of two refineries in Canada by the Shell interests during the past three years and also is responsible for the building of plants by smaller concerns, two of which are expanding in eastern Canada. Ground was to be broken today for the new refinery of the California Standard and plans call for completion of the plant by December 1. Approximately $750,000 will be spent for refinery equipment alone and in addition loading and unloading facilities will have to be constructed which will permit handling the crude and products by tanker. Provisions will also be made for handling deliveries locally by rail and truck.

Present operations will include Vancouver, Victoria, New Westminster and Nanaimo. Five new service stations are already under construction and a considerable number of dealers and distributors have been arranged for.

The new Standard refinery occupies a 55-acre site with a new 400-foot wharf extending into Burrard Inlet, where oil tankers will discharge cargo. It is scheduled to be completed about December 1 and will provide the company with full modern facilities for the refining of gasolines and other petroleum products.

All material for the refinery is being purchased in British Columbia and all work is being done by British Columbia contractors and concerns. With the exception of a few trained executives, all of the service station employes and the workers in the company's main offices in the Marine Building will also be British Columbians.

Three gasolines will be produced and sold, Standard Gasoline "Unsurpassed," Standard Ethyl Gasoline and Red Crown Gasoline. In addition, the company will market Zerolene motor oils and greases, Mobiloils, Standard Penn motor oil, and a full line of Calol brand Diesel, marine and industrial oils. Service stations and dealers will sell Standard Oil fly spray, cleaning fluid and other specialties. Standard Stations, Ltd., and their authorized distributors will also market Atlas tires and batteries.

Oil stocks used at the refinery will be selected California Valley crudes of high natural antiknock rating, and until the refinery is completed, gasolines from these crudes will be temporarily imported.

Asphalt Operations in East

Another recent expansion in the Standard of California operations applies to its asphalt sales. Although not generally known the company has recently completed a manufacturing and sales set-up which will make the company an important factor in asphalt markets in the eastern United States. Through a subsidiary—American Bitumuls Corp.—the company has provided for asphalt production at two plants on the Atlantic seaboard. The first plant which has been in operation for several weeks is at Providence, R. I., adjacent to the refinery of the Socony-Vacuum Oil Co., Inc. The second plant which has started operating since the first of the month is at the Baltimore, Md., refinery of Continental Oil Co. Each plant has a rated capacity of approximately 1,000 bbls. daily.

In both cases the company is shipping asphaltic base crude or asphalt stocks by tanker from the West Coast to these plants where the finished asphalts are made. It is not feasible to ship the finished asphalts in bulk by tanker due to the problem of unloading and this arrangement of finishing products at two points of distribution takes care of this operating condition. The Providence plant was built and is being operated by American Bitumuls Corp. At Baltimore it is understood an arrangement has been made by which the Standard subsidiary furnishes the asphaltic stocks for refining and Continental is in charge of the actual operation. The finished products are turned over to the American corporation. A cracking unit shut down for several years at the Continental refinery was used in building the new asphalt unit. New tower equipment especially designed to handle California asphalt materials was installed.

It has been reported this expansion into eastern markets was to include other products. So far as known there is no basis for these reports. American Bitumuls Corp., which has its main offices in San Francisco, has sold asphalt emulsions in eastern markets for some time. The new arrangement strengthens its position and enables the company to offer straight asphalts in tank car lots to customers. The Standard company has a large asphalt business in West Coast states. It was announced early this year the company had acquired all of the minority interests in International Bitumen Emulsions Corp. To acquire these interests the company turned over to the minority owners all of the assets of the corporation in Europe, Africa, Australia, the Far East and India. The corporation now owned by the Standard company retained the patent rights and other assets in respect to sales in North and South America and the Far East.

Foreign Operations

Considerable interest has been manifested recently in the Standard of California's foreign operations. This includes important investment concerns. Incidentally the investments of the latter are not confined to this company. This apparently is a reflection of the fact that these interests believe the oil industry, regardless of general business conditions, has definitely turned the corner, and they are making studies to determine the positions of individual companies. These observers are in agreement as to the probable expanding markets for petroleum, including some of the newer products. They place particular emphasis on markets outside the United States which are increasing despite unsettled conditions and which presumably will show rapid gains with a return to more settled political and business conditions. They do not feel the saturation point has been reached in the demand for petroleum products in this country but are confident the greatest growth in future years will be outside the United States. For this reason they place considerable emphasis on the foreign position of the major oil companies.

Individual studies, it is said, indicate certain companies have come through the depression and the industrial adjustment period of the past five years in a weakened position. Others with a strong current operating position backed by large financial reserves are in a position to carry on important expansion programs in both domestic and foreign operations.

Locally it is assumed the ending of merger negotiations late in 1933 between Standard Oil Co. (New Jersey) and the California Standard leaves the latter free to expand its operations where it sees fit as the former has done for several years. This development it is said does not involve any "competitive war" between the two companies nor does it preclude working agreements which are common in foreign operations with the possibility of merger negotiations being resumed at some future date.

Bahrein Island

Principal interest in the company's foreign operations centers in its Bahrein Island concessions off the coast of Persia in the Persian Gulf. There has been a slow development of this concession since 1931 when the discovery test was drilled. Sixteen or seventeen wells have been completed according to recent reports with initial production varying from 1,500 to 10,000 bbls. daily. Actual production is maintained around 2,500 bbls. daily in line with the present market demand.

The possibilities of this concession have not yet been determined, but it is believed a major field has been discovered and preparations are being made for permanent large scale operations. The oil is similar in some respects to the new Kirkuk supply in Iraq with a gravity

(Continued on Page 32)

East Texas Overproduction Now Running Around Only 29,000 Barrels a Day

By L. E. BREDBERG

FORT WORTH, Tex., June 24.—Tank car shipments and runs to refineries increased in the East Texas Field during the week. However, overproduction is running around only 29,000 bbls. per day, which is not a 2-bbl. per well per day overage, and as the overproduced oil is being sold within the State or manufactured into products sold only within the borders of Texas, this amount should not reflect upon the general market, especially with pipe line and purchasing companies soliciting, and even trading for connections in the East Texas and other fields.

Runs to refineries in the field averaged 48,000 bbls. per day during the week, a 1,500-bbl. per day increase over the previous week. It apparently reflects an increase in overproduction.

TANK CAR SHIPMENT REPORT
(Week ending 12:01 a.m., June 16, 1935)

	Cars	Gallons
Gasoline	613	4,960,488
Fuel oil	233	2,159,887
Residuum	7	57,038
Distillate	60	484,729
Casinghead gasoline	165	1,416,827
Kerosene	63	508,584
Gas oil	36	291,481
Naphtha	9	72,831
Topped crude	28	274,512
Butane	1	10,663
Total	1,215	10,237,040

	No. cars
Shipped under federal and state tenders:	
Interstate	554
Intrastate	137
Coastwise	322
	1,013
Shipped under state tenders only:	
Intrastate movement	194
Shipped under injunction:	
Intrastate movement	8
Total	1,215

Tank truck shipments within the State are reported at around 350 trucks per day, a decided drop.

On June 19 the McMurrey interests were fined $25,000 in District Court at Austin and in another suit 650,000 bbls. of crude oil and refined products belonging to these parties were confiscated and ordered seized by the sheriff of Smith County to be sold at public auction at Tyler and Henderson, July 2 and 3. After the oil is sold the sheriff is to report to the District Court at Austin. If the court holds the sale price was fair, the money will go into the general revenue fund. It is doubtful major purchasers will bid owing to doubt on title. John F. Davis, of the Federal Tender Board, has received word from Washington that oil confiscated under the Texas law could not be moved in interstate commerce without an amendment to the Connally bill.

The attorney general's department of Texas is reported to have a check showing there are approximately 2,700,000 bbls. of oil in pits in East Texas. Pits are to be plowed in and rendered inaccessible for future storage. Four more confiscation suits have been filed at Austin involving 249,000 bbls. of pit oil in Smith, Rusk and Gregg Counties.

Backwaters from the Sabine River overflowed into an earthen pit, lifting out an estimated 75,000 bbls. of fuel oil. Game Warden F. E. Dodson reported another pit containing 500,000 bbls. of oil was seeping and in danger of breaking.

The per well allowable for July will be 3.3 per cent of the hourly potential of each well. The field has an hourly potential of 13,466,200 bbls. from 17,724 wells, 2,929 of which are classed as marginal, or having a daily allowable of only 20 bbls. The allowable is 468,629 bbls. as of June 21.

The Railroad Commission has issued the first tenders on confiscated oil in the East Texas Field to Roger Lacy for 91,807 bbls., and J. C. Potter for 54,564 bbls.

Value of Research Stressed Before Pennsylvania Grade Association

By ROBERT C. CONINE

STATE COLLEGE, Pa., June 21.—Closing their twelfth annual meeting here today, the Pennsylvania Grade Crude Oil Association went on record as opposing the Wagner labor bill (S. 1,958). The resolution set forth that the oil industry has been singularly free from controversies with employes and has consistently paid a proportionately high scale of wages, while a careful study of the provisions of the bill clearly indicates that its enactment would result in strife and dissension rather than in the encouragement of peaceful conciliation of disputes over labor conditions. Speaking for the resolutions committee, D. J. Sweeney, of Buffalo, said that the group has considered the fact that the Reconstruction Finance Corp. has adopted a rule which prevents the consideration of any applications for loans by oil refiners wherever situated or in whatever financial condition. A resolution was adopted and addressed to Chairman Jones of the R.F.C. urging that this rule be lifted and that applications for loans be considered on a basis of merit and without arbitrary restriction against the petroleum refining industry.

Fayette B. Dow, of Washington, general counsel for the association, explained the implications found in the wording of the remodeled N.R.A. legislation. He said the bill giving legal existence to the skeletonized recovery program leaves large loopholes for violators of the monopoly and unfair trade practices acts. The Wagner labor bill and the Guffey coal bill, Mr. Dow said, constitute the greatest threats to the petroleum industry today. While not directed at the oil business, these bills contain features which spell chaos for the industry at some future date.

Mr. Sweeney was loudly applauded when he said that the Pennsylvania Grade oil producers and refiners accepted the petroleum code as a temporary expedient and were ready to let it go when the U. S. Supreme Court ended its legal life. "We were ready to do business for ourselves," Mr. Sweeney said.

Value of Research Work

Dr. S. W. Fletcher, director of research in the agricultural department of Pennsylvania State College, welcomed the 285 members present in the name of the college. Doctor Fletcher said it is a growing hope that in the near future the mineral industries will receive as much financial support from the Government as agriculture now enjoys. The response by J. E. Moorhead, executive secretary of the association, stressed the fact that policies of the association were based on the findings of the research workers at the college. The association wants facts to shape policies and not vice versa, Mr. Moorhead said. So far, he added, the facts indicate that we have an even better material for motor oils, Diesel fuels and various specialty products than we had supposed. The branches of refining and production are receiving tangible benefits from the work at Penn State, however, Mr. Moorhead said. A study of distributing and merchandising methods is needed, he added, and said the results of an investigation in this field would probably prove interesting. The chief objectives of the grade oil marketers is to sell a genuine product to the public on a quality and not a price basis; and to keep the public convinced that it is getting its money's worth and more.

Dr. Gerald L. Hassler, of the college mineral industries school, said that a comparison of the funds spent on exploratory work and the money spent on research indicates that many of the units in the petroleum industry are not convinced of the merits of conservation. The amount of research activity on oil from coal, Dr. Hassler said, backed by direct Government subsidy in Europe, is at least one hundred times greater than the research on secondary oil production in this country.

"As we stand now we have methods of secondary recovery which can probably be used in about 5 per cent of our available reserves at present prices. Our technique includes reliable methods of measuring permeability and porosity, but measurements of oil content still suffer for lack of a dependable method of obtaining representative samples from the sands. On a basis of almost complete ignorance of what goes on back in the sands, it might be said that we have learned to shoot the holes and pack the sands cleverly. However, we are very far from even a beginning of knowledge of the whole story," Dr. Hassler said.

Solve Own Problems

T. P. Thompson, Jr., president of the association, concluded his review of the year's activity as follows: "It seems to me that in this review there are two conclusions which you must have drawn. The first is that we must solve our own problems and not look to governments and legislatures for more than passing aid. The second is that as long as we act in concert we have all the strength and wisdom we need to work out those solutions. We have hoped that a kindly government might free us from the bondage of exclusive dealing agreements. We have found that good salesmanship and the logic of our position are the only weapons with which we can achieve freedom. We have looked with almost religious hope to the code, but the code has gone. We are now upon our own resources. So long as we retain by voluntary action all the benefits which the codes conferred we need not fear. We have considered the possibilities of state regulation of production or the imposition of special production codes. I think we have reached an almost unanimous conclusion that restriction must be achieved by voluntary means."

Discussing the troubles of the oil jobber and possible remedies, Kenneth C. Baker, of St. Louis, pointed to the violent price fluctuations which characterized Pennsylvania grade markets for some years past; lack of uniformity in packaging upcharges; use of non-viscous neutrals in so-called 100 per cent Pennsylvania motor oils (barred in emblem materials); broadcasting of lowest going tank car prices by circular letters indiscriminately. Mr. Baker said that the emblem of the Pennsylvania Grade Crude Oil Association has come to be a hallmark of quality due to strict policing of markets and the successful termination of litigation involving improper use of the familiar oval. The larger companies which discontinued the display of the emblem on their package goods before abuses were corrected, should return to the use of the emblem, Mr. Baker said.

Production Problems

C. B. McClintock, of Oil City, discussing practical production problems, pointed out that except in Warren and Venango Counties in Pennsylvania, and small portions of West Virginia and Southeastern Ohio, methods of increasing recovery by repressuring have not been used in any uniform way. With the exception of experimental work in the Clarendon Field, Warren County, water flooding is confined to the Bradford-Allegany districts which represent about 5 per cent of the total productive acreage in the Pennsylvania grade area, Mr. McClintock said.

Listing eighteen tests applied to motor oils before they are placed in the crankcase, Prof. H. A. Everett, of the Penn State department of engineering, said that when the motor starts the factors determined by these tests begin to change, some rapidly, some slowly, so that after a few hours of operation the refiner would have diffculty in recognizing his product. "It is the fugitive character of these original specifications that constitutes the greatest unknown in the problem of selecting and rating oils. Actual engine tests produce data which require close scrutiny because the characteristics of used oil have been affected by two factors: 1. The inevitable chemical changes due to usage, and, 2. Changes due to the engine idiosyncracies." Professor Everett said. The speaker then described a battery of four identical automobile engines which has been operated in the mechanical engineering laboratory. These engines have been run the equivalent of 25,000 miles at 60 miles an hour, using different oils from time to time with the battery placed back on a reference oil before running each new oil. Noteworthy changes in seven properties were found in this work. These properties are viscosity at 130° F., sludge per cent, Conradson carbon per cent, dilution per cent, neutralization number, steam emulsion number, and flash point.

Small Sum for Research

C. R. Wagner, of Chicago, discussed research and development in the refining business. He pointed out that while chemical companies spend from $1 to $5 for each $100 of gross sales, several refiners are spending from 10 cents to 30 cents on research work. The spending of $25,000 by the association on research work at Penn State, Dr. Wagner said, amounts to about one mill per barrel of oil charged to stills or less than 5 cents per $100 of gross sales. In summarizing, the speaker said, "the research program at Pennsylvania State college means to each member of this association greater yields of valuable products from each barrel of crude oil handled by the industry, it means lower costs of refining which will naturally inure to the benefit of producer and marketer as well, and finally it means the development of new products of premium quality which can be sold at a profit by the members of the association."

Dr. D. S. Cryder, of Penn State, discussed the position of the chemical engineer in the refining industry. "The trained chemical engineer," Dr. Cryder said, "fits in the organization in the wax plant, with the distilling columns, tube stills, or cracking furnaces. He is able to make heat balances, calculate power requirements, and predict the effect of a change in operating conditions on the economy of a process." Dr. Cryder pointed out that before 1920 four chemicals: sulphuric acid, sodium hydroxide, lead oxide and sulphur, were the chemicals used in treating petroleum products. In 1934 this number had increased to about 50, exclusive of those chemicals used in processes still in the experimental stage. Among the chemicals produced as by-products of crude oil refining Dr. Cryder listed many alcohols, organic acids, synthetic rubber and resins, solvents formerly produced from coal tar only, and many others.

Changes in Refining

Dr. M. R. Fenske, of the Penn State petroleum refining laboratory, in his paper entitled, "Hopes for the Future and Facts for the Present," surveyed changes in the refining industry in the past five years, and indicated the means now available in varying degrees of completeness for fuller utilization of grade crude oil by refiners. Higher antiknock gasoline and special solvents should be sought, he said. Dr. Fenske said that there are many things the Pennsylvania refiner has not been told concerning solvent extraction, for instance. Solvent extraction, he said, is a new tool to reduce refining costs as well as make improved products; there are innumerable applications—even more than in distillation; the process used for extraction is as much or even more important than the solvent.

Concluding, Dr. Fenske said, "And so the horizon of the Pennsylvania refining industry is even broadening. This industry is the only one processing a single uniform high quality crude. The advantages of this are best proven by its past record. It has steadily grown during every economic, social, and scientific change. Its business has always been a premium quality business. Every assurance should be offered every consumer of its products that this will be the primary characterization of them. It is the basic thought of every refiner viewing the future hopefully. The facts are ample to enable this to be always true."

Directors Chosen

Directors of the association named for the 1935-1936 term are:

H. D. Atha, Logan, Ohio; John A. Beck, Karns City; E. C. Breene, Oil City; W. J. Brundred, Oil City; W. F. Clinger, Tidioute; E. M. Craig, Freedom; J. D. Dinsmoor, St. Marys, W. Va.; F. D. Dorn, Bradford; Fayette B. Dow, Washington, D. C.; Carl Daugherty, Butler; E. C. Emery, Bradford; J. P. Flynn, Sistersville, W. Va.; C. L. Huff, Columbus, Ohio; Otto Koch, Bradford; H. L. Lewis, Warren; H. A. Logan, Warren; D. B. McCalmont, Franklin; J. H. McCoy, Columbus, Ohio; Parker Melvin, Bradford; S. Messer, Oil City; F. E. Richart, Wellsville, N. Y.; Noel Robinson, New York City; C. L. Suhr, Oil City; D. J. Sweeney, Buffalo, N. Y.; T. P. Thompson, Jr., Bradford; S. M. Vockel, Pittsburgh; N. H. Weber, Chicago, and Paul Zook, Bradford.

The board of directors will meet in Oil City June 28 for the election of officers.

MARSHALL QUITS P.A.B.

WASHINGTON, D. C., June 24.—J. Howard Marshall, one of the original members of the Petroleum Administrative Board and first advisors of Oil Administrator Harold Ickes, has resigned from the oil administration to return to the practice of law.

Mr. Marshall will work with a group of California oil operators in furthering voluntary production and refining agreements.

General view of Gladewater, Texas, showing drilling activities

Drilling Practices in East Texas Conform to Latest Engineering Data

By L. G. E. BIGNELL
Petroleum Engineering Editor

Practically all wells in the East Texas oil field, over 17,650 in number, have been drilled and completed with regular rotary outfits until quite recently when it has been found necessary to complete many wells with cable tools. Low pressure in the formation has permitted mud fluid to enter the producing sands and it has been difficult to get the wells to deliver oil to the bottom of the hole. In those zones of low bottom hole pressure the wells are usually placed upon the pump immediately upon completion.

The usual practice followed in East Texas has been to start the hole 15 or 12 inches in diameter and set about 250 feet of either 12½ or 10-inch casing that is well cemented to shut off surface water. The best practice has been to cement the full distance behind the surface string. The hole is then reduced to 8¼-inch and drilled to the base of the Austin chalk, where a string of 7 or 6⅝-inch casing is set and cemented with from 150 to 300 sacks of cement. To determine whether the job is tight and the casing has no leaks it is usual practice to build up from 600 to 800 pounds pressure within the casing before the hole is drilled into the pay formations. If the test is successful and the pressure does not drop materially during the test period the well is then drilled in with rotary.

When the field was younger and the formation pressures were higher it was considered good practice to equip the top of the flow string with blowout preventer. A column of fresh water 3,650 feet high will exert a pressure of about 1,570 pounds per square inch at its base. When formation pressure was around 1,600 pounds per square inch and the mud fluid became gas cut or part of the mud had been removed from the hole, wells did get out of control and many serious fires resulted.

The present formation pressure averages about 1,212 pounds per square inch for the East Texas Field. This is much below the pressure exerted by a column of fresh water.

Portable Type Rig Fronts

The methods followed in completing wells in this field, when they were drilled in with rotary outfits, has been to run tubing to the top of the pay and then either wash out the mud with clear water or swab the wells through the tubing. As formation pressure declined swabbing was resorted to more frequently because this action apparently has better cleaning action on the face of the sand than washing with water.

Now that the formation pressures are below 1,225 pounds it is becoming quite general practice to move some kind of cable tool outfit over the hole after the flow string of casing has been set. This outfit may be a portable cable tool drilling unit, or it may be a portable type steel rig front. One major company has designed a special portable rig front unit for use in completing its wells.

There are a number of wells now being drilled along the eastern edge of the field finding from 6 inches to 2 or 3 feet of pay. These wells are put on the pump as soon as completed and classed as "marginal wells" and allowed 20 bbls. production daily. It is necessary to complete them with cable tools and use every precaution not to plug the sand with mud or force water back into the formation. Some operators believe that many east side wells completed early in the life of the field would have produced if they had been completed in this manner and this area might have been drilled earlier if this practice had been followed.

Another area that is now receiving much attention is along the northeast edge of the field in Upshur County where the pay is found lower than in the main portion of the field. The water level in this area is found at about —3,355 feet below sea level instead of —3,320 feet in the main field. Some of these wells in the northeast extension are being completed with cable tools and much care exercised to prevent drilling into water.

Some wells are being drilled along the western edge of the field where salt water has long been present. In many instances good wells are resulting but again it is necessary to use care or the holes may penetrate water and ruin the pay streak.

A systematic method of setting up and dismantling rotary equipment has been followed by most operators in the East Texas Field with appreciable saving in time and expense. Following this system many wells are dismantled after completion and the rotary equipment moved to new location, set in place and the surface string of 12½ or 10-inch run and cemented all within a day and a half. The wells are completed within 10 days after drilling starts.

Unnecessary equipment has been eliminated and other equipment has been so combined as to be more compact and easily moved. A definite schedule is followed in dismantling, grouping equipment for moving, order of moving, deposition at the new location, and in rigging up. The schedule is sufficiently flexible to permit such changes in detail as may be necessary to meet local conditions. Preplanning of all operations has resulted in much better co-ordination of the various departments involved.

After the location has been staked the first thing done is to dig slush pit and cellar and cast concrete derrick corners. The derrick is then erected, with pipe racks and foundations for slush pumps and steam engine and space cleared for the boilers. With this preliminary work completed the trucking contractor moves the equipment to the location and the crew rigs up. When the well is completed it is usual practice to leave the derrick over the hole. For a time derricks were cut down when the wells were flowing naturally and starting after each run period without priming, but since it has become necessary to start the fluid flowing by some artificial means many derricks are being moved back over the wells to aid in this work.

This systematized method of handling equipment around the East Texas wells indicates the progress made in the direction of orderliness in all details pertaining to field operations in this field.

Many operators in anticipation of a clause in lease contract that requires that the land be returned to owner in its original condition are casting large holes in concrete foundations to be used

for the placing of sticks of dynamite to wreck the foundations when final abandonment of the property is necessary.

Drilling Costs

When the boom was on in this field and equipment was in demand contractors received about $3.50 per foot but competition gradually lowered drilling costs to about $1.50 per foot. It is reported that wells are now being drilled and cased for $6,500. It is rumored some operators have made contracts with the drilling contractors to deliver to them as much as 20,000 bbls. of oil from the well for such work. This leaves such a margin of profit the contractors usually sell their certificates for future oil at appreciable discounts, but still somewhat above the cash price for the wells.

To equip the wells for flowing christmas trees with 2,000-pound fittings are installed and the wells produced into oil and gas separators through the tubing. When formation pressures were higher most wells would start to flow immediately the control valves were opened but lately it has been found necessary to either swab them on to production or kick them off with compressed gas and this has necessitated the re-erecting of derricks over the holes removed when the wells flowed more freely.

To swab the wells it is usual practice to screw about 50 feet of tubing above the christmas tree fittings so that the swab can be run in and removed from the tubing without opening the well up to open flow. This necessitates a derrick over the well. A portable winch is used for such swabbing operations.

Some pumping units are so designed as to permit of hooking up a turntable for cleanout work when wells go dead but there has not been much necessity for use of such equipment in East Texas wells for they do not sand up.

Portable winches cost about $5,000 complete with the truck. To equip the well for pumping costs from $3,000 to $5,000 according to the type of equipment selected.

Geological Notes

Production in the East Texas Field comes from the Woodbine formation. The sand is lenticular in nature in most of the field and the lenzes are surrounded with impervious materials forming partings.

These lenzes of sand are found to be quite variable as to porosity and saturation but uniform as to original formation pressure. The pressure at the time the field was opened was about 1,650 pounds per square inch. With the production of nearly 700,000,000 bbls. of oil it has been reduced to approximately 1,212 pounds average. With daily withdrawals at about 460,000 bbls. the drop in formation pressure has been very moderate.

When the field was first opened there was discussion among geologists as to the exact type of sand producing the oil. Some thought it was Tokio, or the same as found in portions of Louisiana and Arkansas to the east of the field. Others decided that it was Woodbine, but lack of fossil evidence made it hard to make this final determination until other data were at hand. It is now agreed that the producing sand is of Woodbine age but has also been influenced by the later Eagle Ford Sea.

The formation was all laid down along an ancient short line and early in the Austin age volcanoes in what is now southwestern Arkansas and in Central Texas discharged large quantities of ash into the air and much of it settled and mingled with the Woodbine sand. This ash was converted to bentonite in many localities within the field and is now found in many cores recovered from East Texas wells.

The Woodbine sand grains are cemented with a Siliceous coating and a secondary coating of calcareous materials. These coatings of cementing materials hold the sand grains in place.

Because of experience gained in the Woodbine fields along the Mexia and Balcones faults of Texas where the holes were drilled almost through the Woodbine section and water encroachment occurred early and wells went to salt water operators in East Texas decided to drill in a minimum distance and while the Woodbine formation is approximately 40 feet average thickness for the field the penetrations of wells is about 10 feet average.

Many queer experiences are recited concerning drilling in the pay formation. One well completed a short time ago found 14 feet of dry Woodbine sand directly below the Austin chalk. This lense contained neither oil, gas nor water but after penetrating through an impervious stratum below it a good oil sand was encountered and fair size well secured.

Plugging Back

When wells encounter water in drilling it is usual practice to plug back with cement and this is common practice in the East Texas Field. Not many wells have drilled into water because of the practice of only taking in the upper part of the pay formation but there are many wells that have made water after having been produced for some time.

Plugging back such wells presents many problems and they have been solved in various ways. In one instance a well with 5-foot penetration in the Woodbine sand was making considerable water and it was decided to plug back with lead wool. About 1,200 pounds of lead wool was used and the hole plugged about 2½ feet and the water cut off with the well still making its daily allowable of about 27 bbls. of oil by natural flow.

Along the west side of the field from 25 to 50 wells are being plugged back with cement each week. This is to cut off bottom hole water and has been found successful for a time in most instances.

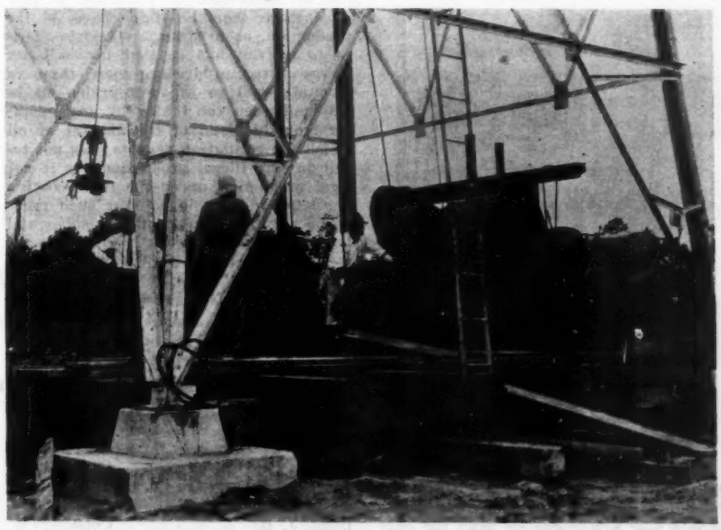
Water analysis of many samples indicate that the salt water of the west side of the field has not yet put in its appearance in the east half of the field. The various kinds of water produced in the East Texas Field are easily recognized when analyzed and the true Woodbine water has a specific gravity of about 1.041. It has an average solid content of about 62,900 parts per 1,000,000, ranging from 51,000 to 67,000 parts per 1,000,000.

East Texas Development Practices

This is the second in a series of three articles prepared by Mr. Bignell to give a comprehensive survey of the East Texas Field. The first article of the series was published on pages 11 and 12 of the June 20 issue of The Oil and Gas Journal and the concluding article will be published next week in the July 4 issue of this publication.

The accompanying article shows conditions affecting development work in the East Texas Field and the article next week will deal with production and production methods and practices. This series is calculated to give a complete picture of conditions in the field as they affect operations and production. As shown in the first article, published June 20, the East Texas Field is not regarded any longer as a menace to stability of the petroleum industry because the area, as a whole, now is being developed and produced in an orderly manner based on the best engineering knowledge and practices.

Typical rotary outfit in the East Texas oil field. Note lack of enclosures of any kind around derrick



Portable winch, with spudding attachment, used in the East, North and Northwest extensions to the East Texas oil field. This type equipment, with cable tools, is used for completing wells after the hole has been drilled down to the top of the sand with rotary outfits and care is exercised in penetrating the thin lenzes of sand found in those extension areas

W. H. Roeser Expires as He Rejoices at Discovery

William H. Roeser died Tuesday at his home in Fort Worth, Tex. He was 60 years old, and was a brother of Charles F. Roeser.

Two hours before a heart attack caused his death he was told of the discovery of oil in a well he was drilling. Elated over the news, he ordered lunch as he talked of the new well. A few minutes later, before a doctor could arrive, he was dead.

Mr. Roeser was born in Marietta, Ohio. When the oil boom developed at Beaumont, Tex., Mr. Roeser went there as a mere lad. He moved to Cleveland, Okla., in 1905 and drilled several wells and moved to Tulsa in the spring of 1907, when he found production in the Glenn Pool. In 1912 he moved to Jack County, Texas, where he opened a new pool. He has since been living in Fort Worth as a business associate of his brother, Charles F. Roeser.

H. H. GALBREATH DIES

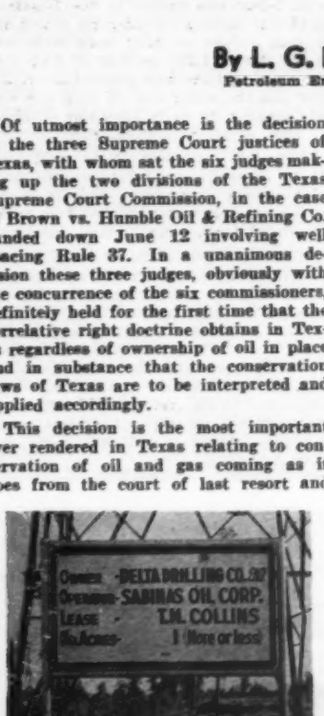
INDEPENDENCE, Kans., June 24.—H. H. Galbreath, 76 years old, a pioneer Kansas and Oklahoma oil producer, died Thursday night of pneumonia in a Grand Rapids, Minn., hospital. He came here in 1901 from Ohio, and at one time was connected with H. F. Sinclair in oil operations. He was instrumental in the development of the Canary and Leonard Pools in Oklahoma.

Correlative Rights Are Recognized in Texas by Supreme Court Decision

By L. G. E. BIGNELL
Petroleum Engineering Editor

Of utmost importance is the decision of the three Supreme Court justices of Texas, with whom sat the six judges making up the two divisions of the Texas Supreme Court Commission, in the case of Brown vs. Humble Oil & Refining Co. handed down June 12 involving well spacing Rule 37. In a unanimous decision these three judges, obviously with the concurrence of the six commissioners, definitely held for the first time that the correlative right doctrine obtains in Texas regardless of ownership of oil in place and in substance that the conservation laws of Texas are to be interpreted and applied accordingly.

This decision is the most important ever rendered in Texas relating to conservation of oil and gas coming as it does from the court of last resort and



One method of marking a lease, as required by law, to indicate acreage

being binding as it is on all state and federal courts for it means that Texas should now administer its laws not only to prevent physical waste but also to protect the correlative rights of producers, a thing many good Texas lawyers and the federal courts there have shied away from in the past. Texas is now in a better position than ever before to contribute to stabilization in the oil industry.

Although this opinion definitely held that the correlative right doctrine obtains in Texas, that is, that the rule of capture is subject to state regulation to protect each landowner from drainage by his neighbors, a point about which there has heretofore existed much doubt in the minds of good lawyers, and in the minds of federal judges passing on the Texas conservation statute and rules and regulations of the commission, they having placed principal emphasis on merely preventing physical waste; it is quite debatable whether it now rests in the power of the Railroad Commission to readjust allowables in such manner as to charge with the excess production of oil those operators who have heretofore produced more oil than their fair share of the recoverable oil, or, otherwise stated, who have already produced more oil than an amount equal to the recoverable oil originally within their lands.

This point must be developed by stages. To begin with, it is and always has been the law in Texas (as elsewhere) that unless and until restricted by valid statute or regulation of the state an operator may produce all the oil he chooses through wells on his land; and although he may have produced more than his reasonable share of the oil in the pool, the excess is not illegal production. In other words, until then the rule of capture applies.

In the second place, it can be strongly argued that whenever an administrative agency of the state in administering a conservation and proration statute fails so to restrict operators as that no one of them shall be permitted to produce more than his fair share of the production, or to state it otherwise, fails so to restrict him as that he shall not be permitted to produce more than an amount equal to the recoverable oil in his land, then the taking by any operator from his land of the amount of oil which the regulation permits does not result in any illegal production. Is it not legal production under the then existing regulation? True it is, that such regulation may not conform to the spirit and purpose of the statute; nevertheless, it is the regulation of the designated state agency.

Statute Not Self-Executing

The proration features of the Texas statute, or of the statutes of any other state, is not generally self-executing, for, as is clear, the Railroad Commission, or such other regulatory body as exists in states other than Texas, must issue rules and regulations to put it into force. If the statute itself could have been specific and definite to the effect that no operator should be allowed to produce through wells on his land an amount of oil greater than the recoverable oil within his land and had laid down specific rules for determining such amount, then it would have been self-executing, so that after the passage of such a statute and without a regulation of the commission, no operator would have been allowed to produce more than the amount within his land; but the statute does not, as, in the nature of things, it could not reasonably have gone that far.

The statute as it was written required a hearing and a decision by the commission as to the amount each operator might produce. The mere fact that the commission may have mis-administered the statute (as is now shown by the Brown decision) does not, it will no doubt be argued, operate to make what now appears to have been excessive production by any operator illegal production.

These are the views expressed by a leading attorney for an oil company and in giving them he admitted they may not be wholly correct, but they are worthy of serious consideration in view of some opinions expressed as to the probabilities of the commission being required to review past production records of operators who are suspected of having recovered oil in excess of an amount estimated originally in place under their land.

It does seem certain, however, that hereafter the commission in its rules and regulations should administer the law in conformity with the decision of the Brown case that is, in full recognition of the correlative rights of operators, which means that each operator should be allowed to produce no more oil than an amount equal to the amount of the re-

ACREAGE, WELLS, SPACING AND ALLOWABLE ON LARGE TRACTS IN EAST TEXAS FIELD FOR JUNE

	Wells	Drilling	Permits	Leases	Acreage	Well density, acres	June daily allowable
Humble O. & R. Co..	1,853	27	4	152	14,567	7.86	48,635
Gulf Prod. Co.	1,101	33	6	87	9,078	8.20	30,830
Magnolia Pet. Co. ..	962	18	0	136	6,600	6.86	25,394
Atlantic Oil Prod. Co.	840	10	23	82	5,929	7.06	24,525
Sinclair Prairie Oil.	802	26	6	51	6,769	8.43	19,651
Shell Pet. Corp. ...	574	12	19	53	4,324	7.55	16,022
Sun Oil Co.	563	11	0	66	4,840	8.60	15,714
Tide Water Oil Co..	541	5	7	60	4,191	7.74	14,132
Stanolind O. & G. .	514	9	5	76	4,836	9.42	12,786
Marathon Oil Co. ..	481	6	0	33	5,406	11.22	9,036
Texas Co.	349	5	0	36	3,133	9.00	10,249
Ark. Fuel Oil Co. ..	314	4	2	45	2,961	9.45	8,005
Yount Lee Oil Co. .	287	3	0	44	2,182	7.55	7,270
Hunt Prod. Co.	276	4	1	35	2,225	8.07	5,886
Empire G. & F. Co..	179	1	11	16	1,249	6.96	5,396
Amerada Pet. Corp..	132	0	11	20	1,123	8.53	3,647
Selby O. & G. Co. ..	103	3	0	8	1,163	11.30	2,063
Simms Oil Co.	87	0	0	9	1,054	12.12	2,264
Barnsdall Oil Co. ..	83	1	0	8	575	6.93	2,226
Houston Oil, et al .	76	1	0	15	501	6.62	1,729
General Crude Oil .	71	2	0	10	267	3.77	1,916
Roeser-Pendle'n, Inc.	63	0	0	11	490	7.78	1,620
Danciger & Manahan	52	1	0	17	138	2.65	1,305
Eastern Tex. Pet. Co.	45	6	0	9	641	14.25	728
British-Am. Oil Co..	40	0	5	8	335	8.40	1,044
Jones-O'Brien, Inc...	34	0	0	5	227	6.66	861
Calif. Pet. Co. of Venezuela	27	2	0	5	238	8.83	690
Continental Oil Co..	18	1	0	4	227	12.60	481
Total	10,467	191	100	1,101	85,269	8.15	247,714
All others	7,190	307	116	2,144			219,200
Grand total ...	17,657	498	216	3,245			466,914

ACREAGE, WELLS, SPACING AND ALLOWABLE ON SMALL TRACTS IN EAST TEXAS FIELD FOR JUNE

Operator—	Farm	Survey—	Acreage	Wells	Density acres	Lease daily allowable	Allowable per acre, bbls.
Amatex Pet. Co.	C. Jones	G. Hooper	14.00	6	2.34	178.78	12.75
American Liberty Oil Co.	T. Elder	G. Van Winkle	7.38	5	1.47	100.00	12.55
Atlantic Oil Prod. Co.	A. Judge	G. Johnson	455.00	70	6.50	2,471.80	5.42
Bond, J. B.	Cobb	C. Rhodes	7.73	4	1.93	132.60	17.20
DeMontrand Oil Co.	Pinkston	R. Pru	24.00	7	3.43	215.39	8.96
Elm Oil Co.	Eaton "B"	R. Cordova	21.00	9	2.33	202.64	9.65
Everett Drlg. Co.	Barton	G. Van Winkle	1.20	2	.60	40.00	33.30
Everett Drlg. Co.	Laird	G. Van Winkle	12.00	5	2.40	100.00	8.33
Farrell & Co.	Christian	G. Hooper	1.44	2	.72	58.82	40.75
Fisher, F. W.	Wilson	R. Cordova	3.50	5	.70	103.50	29.60
Fleming & Kimball	Barnes	G. Hooper	30.00	9	3.33	263.16	8.77
Galvez Oil Co.	Cole	G. Meadows	40.00	11	3.64	367.54	9.20
Gillespie, G. L., rec.	Mosier	G. Castleberry	8.65	4	2.16	120.63	13.95
Henbury, Harry	Gage	H. R. Hokit	3.90	3	1.30	80.07	20.05
Heasly, H. C.	Register	State Land	3.60	3	1.20	75.48	20.09
Idaho Oil Co.	Harris "A"	Castleberry	1.02	2	.51	55.08	54.00
Invincible Oil Co.	Williams	G. Penn	14.00	8	1.75	240.04	17.10
Lacy, Roger	Adkins	Dainwood	8.00	6	1.33	142.12	17.75
Lewis-Breeding	S. S. Cook	Vargas	10.00	6	1.66	140.25	14.02
Lockhart, H. L.	Weiss	Armendaris	3.06	2	1.53	62.90	20.50
Lucey Pet. Co.	Christian	Hooper	32.00	7	4.57	194.99	6.10
McClanahan & Venable	Birdwell	R. Pru	150.00	35	4.28	1,115.02	7.45
McMurray & Fair	Fair	M. J. Pru	20.00	7	2.86	202.47	10.12
Magnolia Pet. Co.	Barksdale	M. J. Pru	20.00	5	4.00	122.05	6.15
Magnolia Pet. Co.	Davis	Chism	25.00	9	2.78	262.82	10.47
Magnolia Pet. Co.	Griffin	Van Winkle	44.00	15	2.93	296.01	6.73
Markham, Fred S.	Cook	Jordan	20.00	6	3.33	170.34	8.50
Nemo Oil Co.	Eaton	Cordova	.50	2	.25	51.34	102.68
New Process Prod. Co.	Anderson	McAnally	8.61	8	1.07	207.23	24.02
Producers Pet. Co.	Blk. 12	Hokit	3.00	3	1.00	71.91	23.90
			902.59	266	3.71	7,844.98	29.50

coverable oil originally within his property.

Revised Rule 37

In the opinion written by Associate Justice John H. Sharp of Texas Supreme Court, it is stated that revised Rule 37 as amended January 31, 1933, reads as follows:

"Rule 37, adopted November 26, 1919, is hereby amended in so far as it applies to the East Texas Field so as to hereafter read as follows: 'No well shall hereafter be drilled for oil or gas at any point less than six hundred and sixty (660) feet from any drilling or completed well; and no well shall hereafter be drilled for oil or gas at any point less than three hundred and thirty (330) feet from any property or division line; provided, however, the commission in order to prevent waste or to protect vested rights, will, after hearing, grant exceptions permitting drilling within a less or shorter distance than hereinabove prescribed, upon application duly filed fully stating the facts, notice of such application and hearing having been first given to all adjacent lessees affected thereby; provided, that if all adjacent lessees affected thereby waive in writing, notice of hearing on or objection to the granting of said application, the commission may proceed to determine such application without hearing; and, provided further that in cases of forced offsets the commission may grant exceptions without waivers or hearing when it is evident that the wells desired are necessary to protect the properties on which it is proposed to drill them.'"

Rule 37 was further amended on June 13, 1933, by adding to the exceptions described above the following: "or to protect any property against undue drainage by reason of the operation of the wells of any other operator." In as much as this last amendment was adopted after the permit in question had been granted the court held "for the purposes of this opinion we will consider the rule in force at the time of granting the permit in question."

Facts in the Case

This case developed because the Humble Oil & Refining Co. filed suit to set aside an order of the Railroad Commission granting a permit to C. H. Brown to drill an oil well on the west 1½ acres of a 3-acre tract of land located in the East Texas Field upon the east 1½ acres of which Brown had already drilled one producing well under a permit. The tract had shortly before been subdivided and Brown was the separate lessee of each owner. This 3-acre tract adjoined the south line of a 102-acre tract leased by the Humble Oil & Refining Co. The lands of the Humble Oil & Refining Co. also bounded the 3-acre tract upon the east and west.

Suit was filed in the District Court and relief was refused the Humble Oil & Refining Co. and the case then appealed to the Court of Civil Appeals at Austin, and the judgment of the trial court was reversed and the injunctive relief prayed for granted by a divided court. The case was carried to the Texas Supreme Court and the majority decision of the Court of Appeals was affirmed.

Texas Joins Union

Not only is this decision of great importance to the oil industry in that it established correlative rights of property owners to oil and gas under their land, but by making this decision Texas is now governed by laws similar to those effective in other oil-producing states. In effect Texas has again come back into the union of oil states and henceforth the regulatory body of Texas must follow the ruling of the Supreme Court in this case.

This case cannot be carried to the Supreme Court of the United States unless the plaintiffs have previously set up claims under the Federal Constitution or laws because it is a state law upon which the Texas Supreme Court has passed judgment and this opinion will be binding alike upon all courts in Texas whether state or federal in character. In at least one three-judge case the Federal Court ruled the opposite to this decision upon the correlative right question. Canadian River Gas Co. vs. Terrell, Vol. 4, Federal Supp., page 22, decided on June 22, 1933.

Engineers Recognized

In the opinion it is stated that it is impossible to measure the exact quantity of oil and gas beneath each tract of land. It is equally impossible to fix a standard which will give exact justice to all landowners. Some landowners wish to produce oil and gas to the limit, while others desire to keep their oil and gas in the ground and develop it in less quantities. Hence arises the conflict of interests. It is now, however, recognized that when an oil field has been fairly tested and developed, experts can determine approximately the amount of oil and gas in place in a common pool, and can also equitably determine the amount of oil and gas recoverable by the owner of each tract of land under certain operating conditions.

The opinion also states that conditions may arise where it would be proper, right, and just to grant exceptions to the rule so as to permit wells to be drilled on smaller tracts than prescribed therein. Also, that conditions may arise where it would be proper, right, and just to permit tracts to be subdivided and such subdivisions drilled after the adoption of the rule; but, says the court, **"in all such instances it is the duty of the commission to adjust the allowable, based upon the potential production, so as to give to the owner of such smaller tract only his just proportion of the oil and gas. By this method each person will be entitled to recover a quantity of oil and gas substantially equivalent in amount to the recoverable oil and gas under his land."**

Past Practices

The accompanying tables have been compiled from records of the East Texas Field and one shows small tracts that have been recognized as coming under the exceptions to Rule 37 and the commission has allowed extra wells to be drilled thereon.

As of June 18 the field allowable was 466,914 bbls. per day recoverable from 17,657 wells. Of this volume 247,714 bbls. approximately was produced from 10,467 wells. From the remaining 7,190 wells 219,200 bbls. was allowed.

The 10,467 wells are located upon 85,269 acres of land and have an average well density of 8.15 acres per well. As the average allowable for these wells is 23.63 bbls. per day then the daily allowable per acre for these wells is 2.91 bbls.

Comparing this production per acre with the allowable production that may be recovered per well under the closer spacing it will be noted that the closely spaced wells are recovering 5.42 bbls. daily up to 102.68 bbls. daily per acre. Average daily recovery per acre allowed is 10.9 bbls., or 375 per cent in excess of average spaced wells.

This excessive allowable for closely spaced wells upon relatively small tracts of land is obviously unfair to adjacent landowners. It is probable that under the ruling of the Supreme Court the commission will have to adjust future production rate from these and like wells to restrict their daily withdrawals from the common pool to conform to the average withdrawals of wells spaced in accordance with Rule 37.

If this is done acreage, as well as potential, will enter into future proration orders issued by the commission covering the East Texas Field and it is probable that small tracts in other pools in Texas will also be adjusted to conform to this ruling.

Since the legislature has bestowed the power of administering the oil and gas business of Texas on the Railroad Commission, every person, according to the court's decision, has the right to apply to that tribunal for relief as a matter of right, and not as a matter of grace. Consequently future pools should be developed without highly competitive drilling and true conservation should become effective.

Packing Off Liner in Open Hole Between Two Different Producing Horizons

By NEIL WILLIAMS

HOUSTON, Tex., June 24.—A screen setting job involving packing off liner in open 8¼-inch hole between two different producing horizons has been accomplished in a well drilled by Glenn McCarthy at Conroe. The setting is such that the well can be produced either from the upper Cockfield through the casing, or from two lower sands through the tubing.

The well, No. 1 Bertrand, on the extreme southeast side of the field, found the upper Cockfield sand showing oil and gas at 5,038-54 feet. This sand was drilled through and the hole carried to a total depth of 5,132 feet. Two lower sands showing oil and gas were picked up, one at 5,087-92 feet and one at 5,110-18 feet. The latter is believed to be the equivalent of the main Conroe sand. The sands are separated by hard shale and also the bottom 14 feet of the hole is hard shale.

In view of the showings in all the sands, operators desired to complete the well so it could be produced either from the upper sand, or from the two lower sands, separately or at the same time. Consequently the special and unique setting procedure was devised. In this a precedent has been established which may be attempted in future wells finding production in separate sands under similar conditions.

Previously on the Gulf Coast in wells taking in several different producing horizons it only has been possible to produce all the sands at the same time through the same hole. It has not been considered feasible to separate them. In such cases the screen has been set just to take all the sands in.

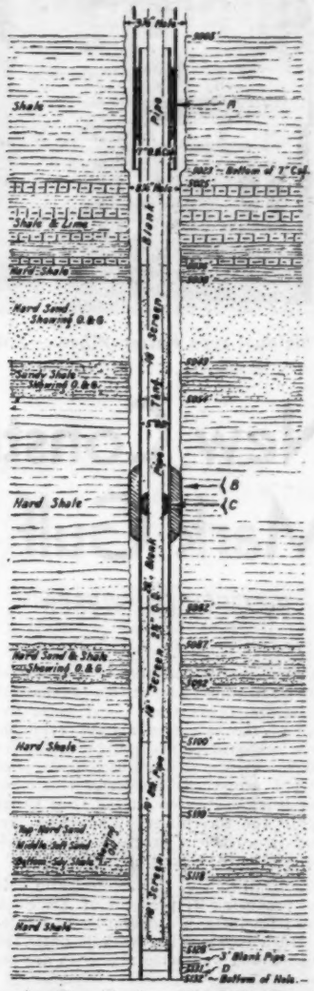
The setting in this well from the bottom (5,132 feet) up included the following: Twelve inches triple seal back pressure valve to 5,131 feet; 3 feet blank liner to 5,128 feet; 18 feet screen to 5,110 feet, taking in the lower sand at 5,110-18 feet; 10 feet of blank liner to 5,100 feet; 18 feet of screen to 5,082 feet taking in the sand at 5,087-92 feet; 28 feet of blank liner to 5,054 feet, sealed off with the special packer to open hole; 18 feet of screen to 5,036 feet taking in the upper Cockfield sand at 5,038-54 feet, and blank liner into and sealed off with a C.C. 5x7 packer to the 7-inch O.D. casing cemented at 5,023 feet. This string of liner and screen is all 5-inch O.D.

The entire setting was made in one trip, being run in on 2½-inch tubing sealed to the inside of the 5-inch liner with a tubing packer at a level between the upper Cockfield sand and the two lower sands, the tubing extending through the lower sands. A special setting tool has to be designed for the job by Mr. McCarthy and Louis Baker, his drilling superintendent.

By observing the drawing of the setting it can be seen that the special packer sealing off the 5-inch liner in the open hole in the shale section between the upper Cockfield sand and the two lower sands separates these respective horizons in the formation. The tubing packer sealing off the tubing in the liner separates the upper sand from the two lower sands in the liner.

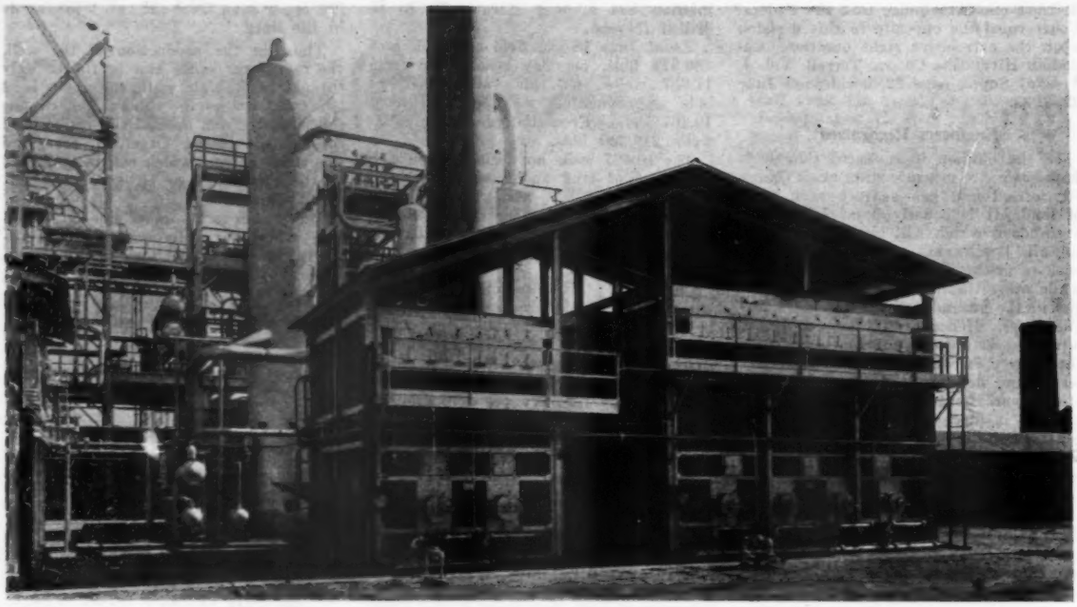
Thus, in the production of the well, the two lower sands can be flowed only through the tubing, while the upper sand has no access to the tubing, and can be flowed only from around the tubing and through the casing. In effect, there are two wells in one, which can be produced at the same time or either one at different times.

The packer in the open hole is 28 feet long when not collapsed but collapses 10 feet and is 18 feet long in the formation. Most operators believed the packer could not be set under such circumstances but the job was accomplished without any difficulty.



A—Csg. Packer (5"x7"); B—Pin packer, which separates upper sand from 2 lower sands, in formation; C—Tubing packer, which separates upper sand from 2 lower sands, in blank liner; D—12" Triple seal B.P. valve. Unique setting in Glenn McCarthy's No. 1 Bertrand, Conroe, in which an upper sand can be produced separately from lower sands, one stream through the casing and the other through the tubing

So far the well has been produced only from the two lower sands, from which it is flowing with 600 pounds pressure on the tubing. In bringing the well in from these sands it was necessary to swab the well only twice, the oil following the second trip of the swab up the hole. Bringing in of the upper sand, which will be through the casing, is being delayed pending a decision of the Railroad Commission on the right of the operators to two allowables. To bring this sand in the well probably will be rocked. The hole around the outside of the tubing now is full of clear water, the mud having been washed out.



This dual type Foster Wheeler still is used in connection with the new Clearosol unit of the Magnolia Petroleum Co. at Beaumont

New Construction, Modernization, Mark Gulf Coast Refinery Activities

By GEORGE WEBER

A bright industrial outlook is reflected in the activities of refineries located within the Texas Gulf Coast area. Because of the extensive market available to the seaboard plants and because most of them operate as units of companies of national scope, the modernization program being instituted on the Gulf Coast may be the forerunner of a general refinery improvement program to be developed within the next year.

Practically all of the refineries in this area, producing 27 per cent of American refined products, are operating at capacity. Much construction work is projected or under way and some refineries are reopening after long periods of inactivity.

One of the largest construction programs is being carried out by the Magnolia Petroleum Co. At the Beaumont refinery of this company where a 2,000-bbl. Clearosol unit has been in operation for a short time, a giant 30,000-bbl. combination skimming and cracking unit will be built. The unit is being designed and built in New York and will be assembled at the plant to begin operation sometime next spring. At present the site and foundations are being prepared at Beaumont. The company is also revamping the 3,750 bbl. cracking unit at its Luling refinery about 150 miles west of Houston.

New Solvent Plants

At Port Arthur the Gulf Refining Co. has just completed a 1,000-bbl. dewaxing plant. The unit performs the Multi-Sol process, employing benzol and methyl-ethyl-ketone as solvents. It is now being tested and adjusted in preparation for regular operation. Next in line at this plant will be the construction of a 9,000-bbl. solvent refining unit, with furfural as the solvent for processing motor oil. It is estimated that the unit will be furnished in a two or three month's period.

The Texas Co. is completing the addition of asphalt equipment at the Port Neches refinery. About 200,000 bbls. a month will be added to the plant capacity as a result of this expansion. The refinery, processing Gulf Coast and South American crude, ships asphalt to markets in practically all of the major foreign countries. The second largest solvent refining unit in the world will be erected at the Texas Co.'s Port Arthur plant. This unit will operate with furfural the same as the Gulf unit in the same city.

A program of thorough inspection and reconditioning is being carried out at the Smith's Bluff plant of the Pure Oil Co. All of the 22 Gyro cracking units with horizontal reaction chambers and the newer Gyro units are undergoing this work.

Texas City Plants

Texas City shows promise of becoming a prominent refinery city. A substantial addition to the 25,000-bbl. modern refinery of the Pan American Refining Co. is rumored to take place in the near future. The refinery was designed with the allowance for future expansion of this sort and the new Stanolind production in nearby South Houston will possibly be a contributory factor to this reported work. The Petroleum Conversion Corp. is reopening its plant in Texas City soon. The old Pierce refinery has been purchased by the Independent Refining Co., an East Texas firm owned by Krole and Travis of Kilgore. The shell stills are being torn out and modernization of the plant is expected. Official information on this work will be available in about 30 days, it was learned.

Another refinery is being operated in Texas City under East Texas ownership by the Seaboard Refining Co. East Texas crude is being supplied by tank car to the small plant. The Stone Oil Co. and the Republic Oil & Refining Co. are operating plants at near capacity in Texas City.

In South Houston a chemical plant to manufacture iso-octane is under construction at the refinery of the Shell Petroleum Co.

West Texas

Throughout Central and West Texas, refiners are feeling some relief from low gasoline prices brought about by East Texas conditions and several are contemplating much needed modernization and construction. Some of these refiners have turned to the manufacture of special products. The Cosden Oil Co. at Big Spring and The Coltex Refining Co. at Colorado are successfully making and marketing a wide range of asphalt products, in addition to the other regular refinery products.

Refinery Repair Bills May Be Cut By Installing Low-Cost Wash Rack

By W. T. ZIEGENHAIN

Compactness, economy and flexibility feature the permanent wash rack installed in a Mid-Continent refinery to handle many "dirty" jobs. The rack was made from short lengths of scrap pipe and from imperfect fittings at a cost of less than $50 and has saved time on repair jobs where comparatively clean surfaces were essential in expediting the repair work on small equipment. Oil and dirt-caked valves and fittings, muddy drums, tank car parts, recovered buried lines, etc., have all passed through the wash rack to save time and money in their subsequent handling for repairs.

The rack does not take the place of a caustic bath, a naphtha wash or wire brushes as are found necessary where a thorough cleaning is needed and where rust and paint hold the dirt in place, but does fill a definite need as a complement to these in a refinery.

For the routine washing of oil drums it is of course necessary to have more elaborate equipment than is suggested here, but sometimes drums come into the compound plant that have been allowed to stand outside for months at countryside filling stations, in garages and become caked heavily with mud. Such drums, if processed through the normal caustic bath would soon overload the bath with dirt and would cut down its effectiveness for the balance of the drums. Such drums can usually be more economically pre-cleaned in a rack such as suggested here.

The rack should be built to meet local conditions and each installation will necessitate a separate set of dimensions for individual parts depending upon what is to be washed, but in general the shape of the rack would take that shown in the accompanying drawing.

The rack should be built over a platform and drain and this platform should be made up as a grill or be perforated, the perforations to be determined by the size of the smallest objects to be washed. Rather than slow up drainage too much, however, it is more practical to use sieves when washing very small objects, the sieves resting upon the grill.

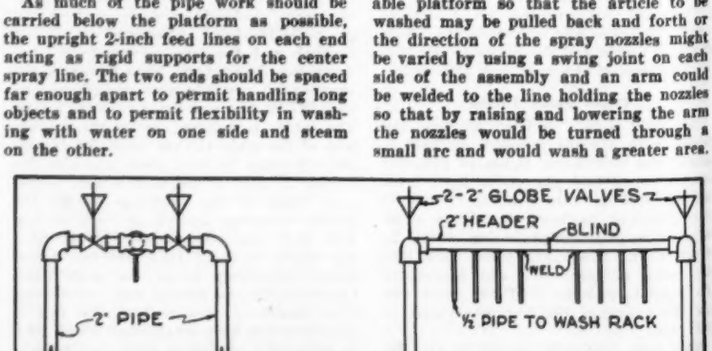
As much of the pipe work should be carried below the platform as possible, the upright 2-inch feed lines on each end acting as rigid supports for the center spray line. The two ends should be spaced far enough apart to permit handling long objects and to permit flexibility in washing with water on one side and steam on the other.

The system of valves suggested in the drawing provides for washing with either water or steam or the steam and water may be run through the same line to provide a warm water wash. By varying the proportions of steam and water any desired temperature can be secured within practical limits.

The spray lines shown here are made from one-half inch pipe nipples welded into the connecting line. The length of the lines may be varied, the longer the nipple the more direct will the stream be applied. Six-inch nipples will usually prove satisfactory.

The principle described above may be easily modified to fit any set of conditions and the problem can be worked out satisfactorily by a practical man who wishes to apply the principle.

The modification might include a movable platform so that the article to be washed may be pulled back and forth or the direction of the spray nozzles might be varied by using a swing joint on each side of the assembly and an arm could be welded to the line holding the nozzles so that by raising and lowering the arm the nozzles would be turned through a small arc and would wash a greater area.



Inexpensive water and steam wash rack for expediting the repairing of small equipment and drums

Marketing Conference Opens at Washington On Code Proposals

By HUGH D. MALLON
Washington Bureau, The Oil and Gas Journal

WASHINGTON, D. C., June 24.—The meeting of the marketing committee of the Planning and Coordination Committee, called at the invitation of the American Petroleum Institute, opened today, with the prospect that it would last at least a week. Almost the entire marketing committee, augmented by 24 others invited to the meeting, brought the attendance to 38.

Shortly after convening under the chairmanship of C. E. Arnott, the group appointed a committee on committees, composed of members of the marketing committee, which appointed the entire personell of the meeting to various special committees. There were five such committees appointed, one to consider provisions governing the lending of equipment, painting of service stations, improvements, lending of money, lotteries and premiums; a second to consider selling below cost, price posting, credits, etc.; a third, trade-marks, substitutions, tax evasion, breach of contracts, definitions and safety in marketing operations; and a fourth to go over the question of lease and agency.

A fifth committee appointed is composed exclusively of attorneys connected intimately with marketing problems of the oil industry who will advise members of the other committees on the procedure which they may follow in arriving at their recommendations.

Committee No. 1 is composed of B. L. Majewski, chairman; W. V. Hartmann, Gulf Refining Co.; Louis Kimmel, Eastern States Conference of Independent Oil Men; E. L. Miller, representing California petroleum marketers; Paul E. Hadlick, National Oil Marketers Association; H. R. Ashton, Lubrite Refining Co.; Jacob Blaustein, American Oil Co., and C. W. McKay, Marathon Oil Co.

Committee No. 2 is composed of J. W. Carnes, chairman; Russell Williams, Independent Brand Petroleum Association; Allan Jackson, Standard Oil Co. of Indiana; E. V. Weber, Ohio Marketers Association; W. R. Schuh, National Association of Petroleum Retailers; C. M. Boggs, Western Petroleum Refiners Association; John Shatford, Planning and Coordination Committee, and Paul Blazer, Ashland Refining Co.

Committee No. 3 is composed of S. B. Eckert, Sun Oil Co., chairman; F. V. Bakeman, Eastern States Conference of Independent Oil Men; C. L. Jones, Socony-Vacuum Oil Co., Inc.; A. V. Bourque, Western Petroleum Refiners Association; Wiley L. Moore, Wofford Oil Co.; R. R. Griffin, Shell Union Oil Corp., and E. F. Battson, Continental Oil Co.

Committee No. 4 is composed of H. W. Dodge, Texas Co., chairman; E. V. Weber, Ohio Marketers Association; H. D. Fruehauff, Cities Service Co.; C. B. Watson, Pure Oil Co.; R. E. Browne, Pennzoil Co.; Fayette B. Dow, National Petroleum Association; W. R. Schuh; C. A. Johnson, Socal Oil & Refining Co.; H. T. Ashton, Lubrite Refining Co., and H. B. Carpenter, Ohio Oil Co.

The legal committee is composed of E. S. Hall, Standard Oil Co. (New Jersey); Joseph P. Walsh, Sinclair Refining Co.; Carl F. Kieser, Socony-Vacuum Oil Co., Inc.; George Ray, Jr., Texas Co., and A. E. Van Dusen, Texas Co.

All the subcommittees have gone into discussion of the various problems involved in oil marketing as they affect the various provisions of both the marketing code under the NRA and the Federal Trade Commission, with the prospect that there will be nothing definite from the committee for several days.

Thomas Bill Fades

Chances of passage of any federal oil control law are becoming dimmer every day as Congress continues to be involved with the legislation which President Roosevelt has placed on his "must" list. This list does not include oil legislation although it does include many measures which will have a direct affect on the oil industry, such as the Wagner labor disputes bill, social security bill, and the Wheeler-Rayburn utility holding company bill.

With date for adjournment of Congress set for approximately July 15 by Speaker Byrns there is not much time left for consideration of legislation not demanded by President Roosevelt, and since the President has made arrangements to go on his own vacation around July 20, the probability is Congress will confine its efforts to passage of the important legislation asked for, letting the rest slide over until next year.

Opponents of the Thomas bill in the Senate have expressed their intention to make lengthy speeches against it if it is brought up, and it is believed administration leaders will not risk their legislative program for a measure not on the "must" list. If the bill passes the Senate public hearings will be held in the House, which hearings are likely to preclude getting it on the floor of the House before adjournment.

Regardless of the legislative situation opponents of the Thomas measure are quite confident the bill will be defeated if it comes to a vote, although if amended to include only the ratification of the interstate compact and the making permanent of the Connally act it would probably pass with only a small minority against it.

Reports that a special message on oil was being prepared by the President are apparently without foundation. Without the active backing of the President it is agreed there is almost no hope of passing it.

The Wagner labor disputes bill has been referred to conference committee.

A permanent labor disputes board would be set up which is expected to absorb the Petroleum Labor Policy Board which would probably continue to adjudicate labor relations and disputes covering the oil industry.

Holding Company Bill

The Wheeler-Rayburn utility holding company bill, passed by the Senate in a more drastic form, has struck a snag in the House, where the Committee on Interstate and Foreign Commerce is considering it. Some members favor abolition of holding companies, and others favor only regulation. Representative Pettengill, of Indiana, and Representative Huddleston of Alabama, have kept the subcommittee from rendering a report recommending abolition, and during the arguments are understood to have convinced a majority of the subcommittee that regulation would be better.

If natural gas is included under the definition of utilities, an amendment will be inserted providing it shall not apply to any holding company which only incidentally, or as an adjunct to ts business engages in the natural gas industry.

Ickes to Hold On

Efforts to discontinue the Planning and Coordination Committee, and its local, state and regional committees were discouraged by Administrator Ickes in a letter to J. D. Collett, chairman of the committee. Part of the letter follows:

"By executive order of June 15 the President amended, so as to continue in effect, existing executive orders theretofore issued under Title 1 of the National Industrial Recovery Act, so far as consistent with said act as amended and extended and subject to any limitation, modification or cancellation the President may hereafter make by executive order.

"It will accordingly be my obligation to continue as administrator of the act so far as the petroleum industry is concerned to carry out the purposes of the act in its amended form. To aid me in this administration I am continuing the Petroleum Administrative Board and the Petroleum Labor Policy Board. The code of fair competition for the petroleum industry under which the Planning and Coordination Committee was authorized and appointed has ceased; but it seems to me very wise that such a committee be continued in existence by the industry to advise with and aid the Government in the administration of the present act. Should this not be done it would be necessary to appoint a committee from the industry for this purpose. As your own committee has been in existence during the whole code period, I prefer it continue rather than to set up a different committee. Will you kindly advise whether your committee agrees with this suggestion? If so, I should be glad to attend to the required formalities."

The staff of the committee has already been greatly curtailed, approximately 35 employes at the Washington office, out of a total of around 65, have been dismissed. Those remaining are winding up routine tasks. Unless the committee decides to continue its activities as suggested by the administrator, it will be disbanded on July 21.

The threat of Administrator Ickes to appoint another committee unless the present committee is continued, may cause the industry to continue to support the organization as it stands.

Federal Tax One Year

The Senate Finance Committee voted to extend the federal gasoline tax of 1 cent for only one year, the House passed Senator Gore, of Oklahoma, was the leader of the fight in the Senate Committee for its repeal, or modification to one year.

J. J. Conry Elected Vice President Carter Oil Co.

John J. Conry, general superintendent of the Carter Oil Co. has been elected a vice president of that company. Mr. Conry has been in the service of the Standard Oil Co. of New Jersey since 1900, when he started to work for the Buckeye Pipe Line Co. in the Ohio fields. In 1903 he was sent west to join the Prairie Oil & Gas Co. and worked in the field for that company until 1910, when he was sent to Rumania as assistant superintendent of the Romano-Americana Co. He was promoted to assistant general superintendent of that company, and was filling that position when the German army invaded Rumania in 1916 and the Americans in that field left the country and returned to the United States. Mr. Conry was sent back to Oklahoma to the then recently organized Carter Oil Co., western division, as superintendent. In 1918 Mr. Conry was made superintendent of the company.

JOHN J. CONRY

James Donaldson Sisler Is Accidentally Killed

James Donaldson Sisler, of Mount Lebanon, Pittsburgh, Pa., formerly state geologist of West Virginia, was accidentally killed while attending a firemen's carnival in Meyersdale, Pa., recently. Mr. Sisler had recently resigned his position with the State of West Virginia to go with the Carnegie Natural Gas Co., and was visiting friends in Meyersdale.

JAMES D. SISLER

He and his party were on a ride in a "whip" and when the car made a sharp turn Mr. Sisler was thrown out, his body striking a steel post, falling to the ground. His chest was crushed. He died in an ambulance as it sped up Ligonier Mountain on its way to Pittsburgh.

Mr. Sisler was a member of the U. S. Coal Commission from 1922 to 1923 as engineer in charge of mining investigations. Later he was a member of a committee on the uses of coal, American Institute of Mining and Metallurgical Engineers. He held membership in the American Petroleum Institute, American Gas Association, Association of American State Geologists, American Institute of Mining and Metallurgical Engineers and the Geological Society of America.

Refiners Participate in S. A. E. Discussions of Fuel Volatility

WHITE SULPHUR SPRINGS, W. Va., June 21.—Great interest centered around matters bearing upon fuel volatility at the summer meeting of the Society of Automotive Engineers which was concluded here today. Although the technologists of the fuel companies did most of the discussing, it is recognized that the subject treated is of great importance to automobile manufacturers also and that they are not unmindful of its consequences.

As Dr. H. C. Dickinson of the Bureau of Standards and a past-president of the Society pointed out, if the Co-operative Fuel Research Committee functioned as intended, the mutual problems of the oil and automotive industries might bring about a solution of fuel volatility problems without the competition which will ultimately yield such a solution. Cooperation is far from being at a standstill, of course, but it appears to have a long way to go before the questions of fuel volatility are settled to the satisfaction of all concerned.

Papers Presented

A considerable proportion of the petroleum producers and refiners were represented at the meeting and their technologists took an active part in presenting papers and discussing the various topics of interest to them. H. F. Huf, Atlantic Refining Co., acted as chairman of the important Fuel Volatility Session and D. P. Barnard, director of research, Standard Oil Co. of Indiana, who is a vice president of the society, handled most of the Friday session which was really a continuation of that of the previous day. Five papers were read at these sessions and a prepared discussion, which really constituted a sixth paper was presented at the same session. There were in addition several shorter prepared discussions and a lively discussion from the floor in which many members of the society as well as invited guests from the oil industry joined. As Thursday's session offered scant time for discussion, it was voted to continue this on Friday and a full two hours were required for the purpose. Although these sessions were the principal ones of interest to the petroleum industry, other sessions included papers and topics of importance to those following fuel research and development and related subjects concerning equipment using liquid fuels. Outstanding in this regard was the paper by Neil MacCoull of the Texas Co. and G. T. Stanton of Electrical Research Products, Inc. entitled "Engine Knock Studies by Electro-Acoustical Instruments." This paper described a new method of knock measurement and some results secured with it and was hailed by both oil and engine men as an important addition to the equipment of those who must design and produce fuels as well as those who perform corresponding functions in regard to engines using such fuels. Though rather complex and still in the development stage, the new knock indicator gives results not secured heretofore by other means, such as the "bouncing pin". It is predicted by at least one oil technologist that the new instrument may enable the automobile engineer to design cylinder heads far superior to those now in use and will perhaps result also in superior fuels, hence both the oil and automotive industry may be profoundly affected as they were by the work of Midgely and others in knock testing and knock control.

Another paper of less importance to fuel suppliers, entitled "Analysis of Surge in Fuel Injection Pipes," was presented by Prof. K. J. DeJuhasz of Pennsylvania State College. It dealt with certain difficult problems in fuel injection in Diesel engines. Several other papers on Diesel engines marked continued interest in this subject.

Nearly all the papers on fuel volatility had something to say about the coming of more volatile fuels, or the difficulties which their use may bring about. Messrs. Field and Fowle, for example, gave data indicating that a general increase in volatility will result in increased fuel prices because of increased costs. This, the authors explained, applies to the long range view and not to the immediate future. Data presented by G. G. Oberfell and his associates of the Phillips Petroleum Co. showed, however, that volatility has been increasing steadily since 1929. More rapid increases seem to be indicated in the near future. In another paper, Neil MacCoull and E. M. Barber of the Texas Co. cite difficulties being encountered with vapor lock in cars of recent design. On the other hand, both authors and discussors pointed to advantages in power increase and acceleration with the more volatile fuels when they are properly used in engines with manifolds that do not run too hot. Some speakers said that there is more to be gained in improved performance per dollar by increased volatility than by increase in octane number, though the former may increase the latter also in many cases.

Mr. Oberfell, in discussing some of the papers said that even if we knew nothing of the changes which are proceeding in the manufacture of gasoline we would be compelled from statistics alone to conclude that the trend toward increased volatility will continue. He continued by saying that the petroleum industry cannot do anything to prevent the economic changes which are taking place. Neither can the automotive engineer appreciably affect the situation regardless of how he designs cars. Cars designed to handle today's fuel only and without provision for using much more volatile fuels are going to cause their owners a lot of inconvenience, this critic believes. The reason, it was explained, is that more and more cracking of oil and conversion of hydrocarbon gases into gasoline of high volatility but low vapor pressure are being produced. Certain conversion processes will increase the tendency to ship directly to filling stations gasolines which is made exclusively from gases, without using any crude oil. Cars will have to "digest" these fuels or sour the owner's disposition, in Mr. Oberfell's view. It is not the problem of the automotive engineer or the petroleum technologist to attempt to stop this trend, he said, and they are powerless to do so, but they can shape their affairs to ride along with the tide.

According to T. B. Rendel of Shell Petroleum Corp., it is only an "inferiority complex" which prevents volatility from assuming its recognized importance in gasoline specifications. This he ascribes to difficulties in interpreting volatility data. There is a strong tendency toward specifications involving only a single figure, he contends.

Some speakers pointed out that 1935 cars with their narrow radiators are running hotter than 1934 models, and several criticisms were voiced against the "art departments" of the car manufacturers which have brought this about, through the use of narrower radiators. One engineer stated, however, that it is the appearance which often sells the car and that if cars are not sold the question of fuel volatility will not matter. Mr. MacCoull pointed to data showing that the fuel systems on some cars run from 30 to 60° F. warmer than those on other makes and indicated that much might be done to keep temperatures lower on systems which now run rather hot. Cars of 1935, he indicated, would give more trouble from vapor lock had they not been fitted with larger vapor vents.

D. P. Barnard seemed to agree that fuel systems might be made to run cooler and even suggested that a car with a rear engine mounting might have some advantage in this respect. W. B. Stout, president of the society, drove to the meeting from Detroit in his car with a rear engine and it was a center of interest among the engineers who attended the meeting.

Mor Volatile Fuels Advocated

G. G. Brown of the University of Michigan was among the discussors who advocated more volatile fuels and expects them to be used more generally. They give more power, better acceleration and better distribution, he indicated, providing they are used with inlet manifolds which are run at lower temperature, which he recommends. Automobile engineers may well be left in a quandary, however, as one discussor pointed out, when facts given by one group are such as to encourage him to design for higher volatility while another survey shows that the economics of the situation are such that volatile fuels will be more expensive and so may not continue to be produced.

There was some criticism of the use of automatic chokes and certain speakers predicted that they will not be retained in new models very long as they are in effect a stop-gap which will go out of use as fuels become more volatile and less heat is applied to inlet manifolds.

C. H. Jorgensen in his paper said that further increases in volatility will require new engineering developments and changes in engine design, carburetor design, manifold design, heat application and its controls, grilles and louvers as affecting under-hood temperatures, as well as in the fuel supply system. This author sees little need for more volatile fuels, but said that if present fuels are to be handled to best advantage that they should be standardized and better classified. As against this, J. O. Eisenger and D. P. Barnard pointed out that the general trend of the past four years toward improved volatility (from the manifold distribution point of view) has resulted in making available fuels of definitely increased usefulness. The practice of seasonal adjustment, intelligently applied, is adding materially to this improved trend. It is felt that the truly "weather wise" gasoline offers a very real opportunity for definite improvement in engine output, they added. Field and Fowle ended their paper by saying, however, that unless some unforeseen development occurs the motorist will ultimately pay about 30 per cent more for whatever benefits he may obtain from the use of a very volatile gasoline.

Forest Oil Corp. Buys Big Nowata Block and Will Start Flooding Operations

By JAMES McINTYRE

The Forest Oil Corp., of Bradford, Pa., the largest producer of oil in the Bradford Field, and a leader in the science of flooding operations in that field, and in the Allegany Field in New York State, has entered Oklahoma to establish the methods of developing dormant Bartlesville sand production that have been so successful in the Bradford-Allegany areas.

The Forest organization has purchased the Warner & Caldwell property in the Coody's Bluff area in Nowata County, consisting of 4,000 to 5,000 acres of old productive leases and several hundred wells.

The purchase includes all or a part of the following parcels of land: Sections 11, 12, 13, 14, 24, 25, 26, 35 and 36 in Township 26, Range 16; Sections 7, 8, 17, 18, 19, 20, 30 and 31 in Township 26, Range 17; Section 1-25-16, and Sections 5 and 6-25-17. Most of the property is in an almost solid block of more than 3,200 acres. The Verdigris River meanders through the block and will be the source of the water supply for flooding operations.

The Nowata-Chelsea Field is 100,000 acres in extent. The sand ranges from 8 to 80 feet in thickness and from 330 to about 900 feet in depth. It has produced an estimated 215,000,000 bbls. of oil, which represents from 15 to 20 per cent of the oil originally in place. It is producing at present about 8,300 bbls. of which Nowata County is credited with 6,600 bbls. and Rogers County 1,700 bbls. The Coody's Bluff area where the sand is about 800 feet deep is said to be the richest part of the field, so that the Forest Oil Corp. is ideally located to pursue its plans of development of the 80 or 85 per cent of the originally placed oil on the leases they purchased.

Flooding Not New

Flooding in the Nowata-Chelsea area is not a new thing. The late Burt Collins and associates were given permission by the State Corporation Commission to establish experimental flooding operations on a piece of property acquired from the Carter Oil Co. in Rogers County and were at work on it when Mr. Collins died. Later the Carter Oil Co. took back the property and has carried along its flooding of the Bartlesville sand until it has passed the experimental stage. That company is now increasing its flooding facilities and will go into the business of extracting the oil by the Bradford process quite seriously. The company sent its production engineers to the Bradford Field to study the system successfully in operation there.

Other parts of the big field have been under gas and air pressure for the past 10 years with varying success. Some of the companies greatly increased the production of their old wells drilled in the early part of the century, and which got down to the fraction-of-a-barrel class. Air repressuring has been most generally used because of the lack of sufficient gas. This is the old Marietta process of Smith

(Continued on Page 32)

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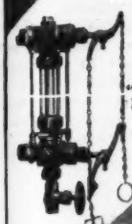
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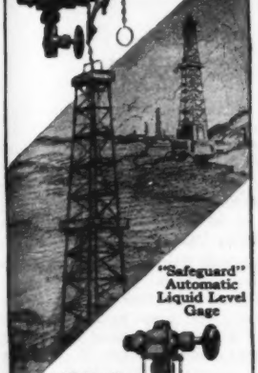

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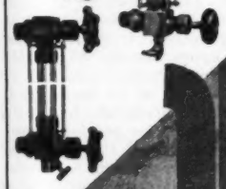
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The Penberthy "All Iron" Liquid Level Gage is automatic in operation. Ball check valves in both the upper and lower body close immediately and positively to prevent the loss of liquid when the glass is broken; the hand operated stop valves may then be closed with safety and a new glass inserted. The drain cock is integral with the lower gage body and is provided with thread for drain connection.

Penberthy Liquid Level Gages are carried in stock by supply houses everywhere.

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NEWS FROM FOREIGN LANDS

ITALY

Azienda Generale Italiana Petroli (A. G.I.P.) has let a contract covering the rebuilding of two cracking units at Porto Marghera, Italy. The operation will be under the Dubbs license of the Universal Oil Products Co. When completed the units will incorporate the two coil selective full flashing method of operation with continuous coking. The rebuilt units will produce approximately 1,500 bbls. of gasoline daily. These units were originally built several years ago.

Authorization for this construction work was given by the Italian government under the Royal Decree-Law No. 1,741 of November 2, 1933. This law is the basis for a program through which the Italian government by the end of 1936 expects to have sufficient refining capacity in Italy to take care of domestic requirements plus some exports. All refining operations and also all importation of refinery products is carried on under a license system authorized by the law of 1933. It is understood that the government has authorized the rebuilding and enlargement of refineries owned by S.I.A.P. (Standard of New Jersey); Benito (Socony-Vacuum Oil Co., Inc.) and Nafta (Shell). The government also has under consideration plans for enlarging and modernizing of the Romsa (subsidiary of A.G.I.P.) at Fiume.

Another plan calls for the erection of a refinery at Bari to refine Albania oils. Consideration is being given to the possibilities of refining oils obtained from asphalt deposits near Ragura in Sicily. The government will also approve plans to produce alcohols, benzole and other products to be used as substitutes for derivatives of petroleum.

While refinery output is being expanded to take care of requirements the government is also licensing the importation of refinery products. The bulk of these imports are being handled by refinery organizations whose plants in Italy later will do away with the necessity of imports.

The following table summarizes the imports and domestic refinery production authorized for 1935 (data in tons):

	Imports	Domestic output	Total
Gasoline	342,000	170,000	512,000
Kerosene	173,500	40,000	213,500
Gas oil	261,200	80,500	341,700
Lubricants	95,000	26,000	121,000
Total	871,700	316,500	1,187,200

DENMARK

American interests have been granted a concession to search for and to exploit all valuable minerals and oils in Denmark, according to advices to the Commerce Department from Assistant Trade Commissioner Paul H. Pearson, Copenhagen. The concession is valid for a period of two years and can be extended to cover 50 years. Work must commence not later than October 1, 1935. The concessionaire must meet all expenses incident to the prospecting and in the event of a valuable find the Danish government receives a stipulated share.

Denmark is notably poor in mineral resources, it is pointed out. No coal or iron has ever been discovered, although a kind of iron ore is used in the gas works for purification. Natural gas has been found in several places and there is evidence of salt beds in Jutland.

The concession to exploit the minerals of the country was previously held by a German firm which devoted itself to searching for salt deposits. Numerous drillings were made without result and after some months the work was abandoned. Two years later, in 1932, drillings were resumed and at a depth of 800 meters evidence was found of a potash bed which, however, was deemed too small to profitably develop.

In 1933 salt was discovered in the neighborhood of Kolding and during 1934 drilling operations were conducted in the district. The American firm has decided to start their boring in this same region at Pasby. Work is scheduled to begin in July when the necessary machinery is expected to have arrived from the United States. Local geologists are of the opinion that the Pasby district contains salt beds at a depth of 700 meters.

The American firm plans to drill to a depth of 1,200 meters. The first boring is expected to cost between 200,000 to 300,000 crowns and will take from two to three months to complete. The company is prepared to spend a million crowns on the project, according to reports. (Danish crown equals approximately 23 cents, U.S.).

U. S. S. R.

An official report of the U.S.S.R. covering the first four months of 1935 shows an increase in total domestic consumption of petroleum products over the same period in 1934. The following table shows the consumption by products for the first four-month periods (data in barrels):

	1935	1934
Gasoline	423,431	346,812
Kerosene	1,060,533	929,078
Lubricating oil	227,346	252,913
Fuel oil and gas oil	2,417,050	2,472,274
Other oils	132,395	110,609
Total	4,260,955	4,111,686

TRINIDAD

Exports of crude oil and refinery products from Trinidad for the first three months of this year totaled 2,616,170 bbls., an increase of 10 per cent over the 2,430,000 bbl. total for the same period in 1934. The 1935 exports were the largest of any first quarter since 1932. The exports for the first quarters of previous years were as follows: 1933, 2,189,156 bbls.; 1932, 2,847,930 bbls.; 1931, 2,523,580 bbls.

The exports for the first quarter of 1935 were divided as follows: Crude oil, 2,716,182 bbls.; gasoline, 19,147,577 bbls. and fuel oil, 70,703,749 bbls.

ROYAL DUTCH

Subsidiaries of Royal Dutch Co. (N. V. Koninklijke Nederlansche Maatschappij Tot Exploitatie Van Petrolembronnen in Nederlansch-Indies) produced 24,078,012 metric tons of crude oil (461,800 bbls. daily) in 1934 according to the annual report of the company which was released recently. This represents an increase of about 9 per cent over the 21,953,473 tons (421,022 bbls. daily) for 1933. These data indicate that in 1934 the Royal Dutch units produced about 11.5 per cent of the total crude oil production in the world. The following table gives the company's production by countries for 1934 and 1933 (data in metric tons):

	1934	1933
Netherlands East Indies	4,478,706	4,192,514
Sarawak	285,534	334,818
Seria (Brunei)	387,972	288,666
Egypt	214,671	232,451
Rumania	1,701,054	1,304,372
Mexico	2,451,478	2,019,263
Venezuela:		
Caribbean	2,212,362	1,845,440
V.O.C.	5,228,763	4,806,681
Colon	727,435	545,806
Trinidad	148,333	120,440
United States:		
Shell Pet. Corp.	3,256,829	3,225,055
Shell Oil Co.	2,292,203	2,289,799
Argentine	476,915	351,274
Iraq	214,857	.....
Total	24,078,012	21,953,473

The company, in its annual statement to stockholders, explains that this increase in production was brought about largely through increased output in Venezuela and Rumania. This was due, it is said to activities on the part of their competitors which forced the company's units to increase their own production. The statement says: "We had to extract oil from the ground which could better have been preserved for the future."

The net profits for the year 1934 amounted to 38,131,574.98 florins allowing a dividend of 7½ per cent after paying 4 per cent on the preference shares.

The company in its statement condemns the trend toward the nationalization of the oil industry in many countries and also the increasing burden of taxation levied on the petroleum industry. Regarding this the statement said in part: "Another matter causing anxiety is the tendency in many countries to tax the petroleum industry so heavily, the taxes in some cases mounting up to several times the c.i.f. cost of the product. Furthermore, several governments aim at intervening in the supply of petroleum products. As nationalistic tendencies gain ground, in some countries, the policy becomes directed towards restrictions in imports of petroleum products and the replacement of these by highly expensive products made in the country from coal, alcohol, etc. Such a policy costs the already heavily taxed population of these countries enormous sums (indirectly, also the non-receipt of import duties on natural products constitutes expenditures), and this notwithstanding the fact that an abundance of natural products is everywhere available at much lower prices."

In regard to the efforts of certain countries to monopolize distribution the company points out that such programs also increase costs to consumers, reduce government revenues by reducing imports and works an unnecessary hardship on private oil interests. The report reviews briefly the operations in all the countries which produce and refine crude oil.

IRAN

Crude oil production in Persia (Iran) for the month of May showed a material decline from the previous monthly figures this year and also May, 1934. The production for the month was 561,000 tons or 126,700 bbls. daily. This compares with the total of 664,015 tons or 150,000 bbls. daily in May, 1934.

For the first five months of this year the Persian crude oil production totaled 3,059,000 tons or 141,800 bbls. daily. This is practically the same as the 3,081,300-ton total for the same period in 1934. It is said that the reduction in May was probably temporary. The Anglo-Persian company and other owners of the Iraq Petroleum Co., Ltd., have found it necessary to make adjustments in their producing operations to take care of the crude oil production from Iraq which now totals approximately 85,000 bbls. daily. The Anglo-Persian company has been absorbing part of its one-fourth interest in the Iraq operations by running the crude to refineries previously operated with Persian crude. It is understood that the company's refinery at Abadan, Persia, is being enlarged to handle larger quantities of the Persian crude oil. The refinery has a rated crude oil capacity in excess of 125,000 bbls. daily.

The Anglo-Persian company in its annual report showed a substantial increase in earnings for 1934 with a net of 3,694,140.11 pounds sterling.

"Production from the company's fields at Masjid-i-Sulaiman and Haft Kel has been further increased, and additional drilling at Haft Kel has given very satisfactory results. Examination of other areas in Iran is proceeding.

"All refineries have operated efficiently throughout the year. Good progress has been made at Kermanshah with the construction of a new refinery for supplying products to northern Iran; it is expected to be in operation by autumn. Abadan refinery is still further extended to meet demands of increasing trade. Crude oil deliveries from the Iraq Petroleum Co. which commenced in September, were treated in the United Kingdom and France. The tanker fleet has been fully employed.

"Sales expanded satisfactorily during the year. Price levels remained low, and business with certain European countries suffered from exchange and import difficulties.

"The government having decided the ancient name of 'Iran' be substituted for 'Persia' stockholders will be asked to approve the adoption of the name 'Anglo-Iranian Oil Co., Ltd.' in substitution for the present name."

Office building of Nederlandsche Koloniale Petroleum Maatschappij (Standard Vacuum Oil Co.) at Pendopo, Sumatra

PUMPING EQUIPMENT

JARECKI-COLLINS SUCKER-ROD BOX CLEANER

This is a very useful tool for removing sand, grit, or dirt from the box or coupling threads of sucker rods in order to insure tight properly made-up joints. May also be used as a thread lubricator.

Raising and lowering the Cleaner under the box or coupling-end of the rod actuates a plunger which jets the cleaning fluid—oil and kerosene—against the threads, effectively flushing out all foreign matter. Entirely self-contained, automatic in operation, and practically indestructible.

Use of the Jarecki-Collins Sucker-Rod Box Cleaner will reduce pin breaks.

(Completely described in Bulletin No. 2)

JARECKI THREADLESS HINGED BELL NIPPLE

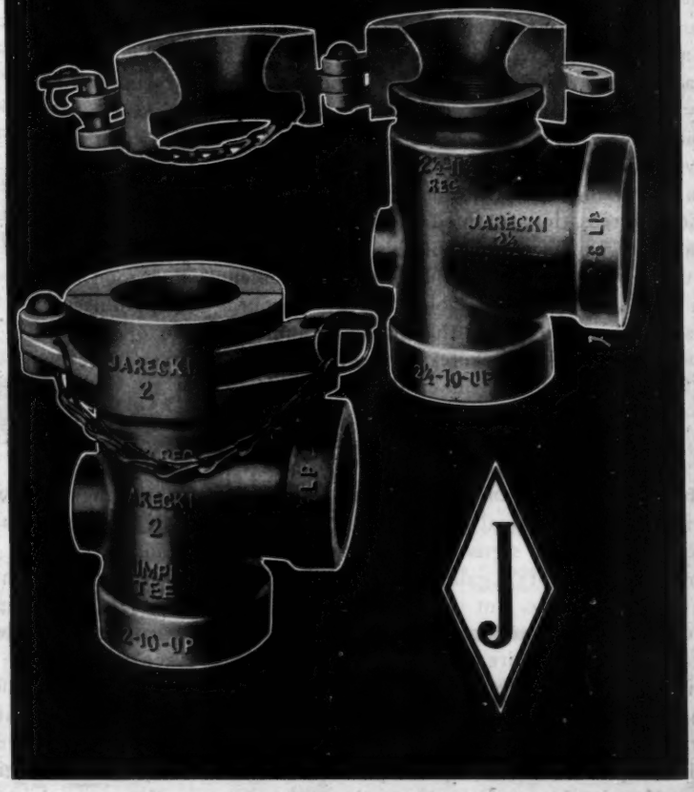
An improved sucker-rod guide which clamps around the tee, causing the weight of the rods to be carried by the body of the tee, instead of by the threads, thus saving the tee threads from wear. Also, there are no threads on this bell nipple to wear out. Provides a wide, flat, level support for rod elevators. Fits any standard malleable tee, as well as the Jarecki Pumping Tee.

(Completely described in Bulletin No. 3)

JARECKI PUMPING TEE

The Jarecki Pumping Tee is a heavy malleable fitting especially designed to connect the tubing, flow line, stuffing box, and bleeder line of a pumping well. All sub-nipples, swage nipples, and bushings are eliminated. Made for all tubing sizes, with all thread sizes marked. The Jarecki Threadless Hinged Bell Nipple may be attached directly to the Jarecki Pumping Tee.

(Completely described in Bulletin No. 1)



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Marketing Problems

The meeting of marketers to discuss stabilization, convened at Washington by the American Petroleum Institute, was encouragingly representative and should be productive of good results.

The purpose, as stated by C. E. Arnott who acted as chairman, was to study the trade practice rules proposed in the late oil code and the trade practice rules worked out under the Federal Trade Commission in 1931 to see if new rules of fair competition could be agreed upon and submitted to the trade commission for approval.

Marketing problems, it will be recalled, were an outstanding difficulty under the oil code. They were the most complicated source of controversy and took more time than all other divisions of the industry combined. It was only when Chairman Arnott's sub-committee on marketing tackled the job that progress was reported.

The progress thus attained has been held since the death of the code and it was the purpose of this Washington meeting to consolidate those gains. The atmosphere of reasonableness and good faith which Mr. Arnott has been able to create encourages hopefulness.

Just at this time, with the main consuming season opening in favorable conditions, marketers should easily see that stabilization is the best policy for everyone in the business.

A Discriminatory Tax

When the Pennsylvania legislature, following mass meetings of motorists in the principal cities and the presentation of a protest bearing a half million signatures, rejected a proposal to increase the tax on gasoline 2 cents a gallon, it was hailed as an encouraging sign of the turn in the tide. But it appears to have been premature.

The same legislature has passed a bill to increase the gasoline tax 1 cent a gallon, the entire $10,000,000 additional thus taken from the motoring public being diverted from highways. For the first twelve months it will be used for relief and after that it will be used to defray the general administrative expenses of the commonwealth.

This is equivalent to a $6 per capita tax levied on every motorist in Pennsylvania above what every other taxpayer pays for general purposes. The only reason he is thus discriminated against is because he is "an easy mark."

Pennsylvania motorists have submitted without effective protest to increasing gasoline taxation until it now amounts to $44 a year, a head. The legislature naturally feels that another $6.00 can be collected just as easily without risk of losing votes.

Legislators may be pardoned for assuming that there is no limit to the "dumbness" of dumb voters, but if this thing of making the motorist pay more than his share of general state expenses keeps on it may some day provoke retaliation.

A Developing Market

Attention was directed a few years ago to the possible market that might be offered to the oil industry by a systematic program for the construction of low cost secondary and farm-to-market roads through the use of road oil. Up to that time interest appeared to have been centered on high cost highways without a proportional regard for the development of feeders for all weather travel.

Highway construction planning seemed to consider mainly the interests of the motoring public and of interurban traffic. The great rural areas and the farming population, pioneers in the good roads movement before the motor car, failed to secure proportionate benefit.

Yet there was every reason for constructing such low cost secondary or farm-to-market roads with road oil so available.

It remained, however, for the depression to develop the program. Increased construction of secondary and farm-to-market roads, financed largely by Federal funds, resulted in an increase of more than one-fifth in the sales of road oil during 1934. The gains were general, except in the Appalachian district, and were greatest in the Rocky Mountain area, Oklahoma, Kansas, Missouri, California, Indiana, Illinois and Kentucky.

Now that a good beginning has been made the demonstrated advantages should lead to a much wider use of road oil on these much needed minor roads, enlarging the market for this particular product.

A Curious Letter

In a rather curious letter to Chairman J. D. Collett of the Planning and Coordination Committee Administrator Ickes, referring to the resolution extending the N.R.A. in limited form, says "it will accordingly be my obligation to continue as administrator of the said act in so far as the petroleum industry is concerned in order to carry out the purposes of the act in its amended form. To aid me in this administration I am continuing the Petroleum Administrative Board and the Petroleum Labor Policy Board."

Yet in the next sentence he says the code for the petroleum industry has ceased. What, then, is he going to administer and where do the Petroleum Administrative Board and the Petroleum Labor Policy Board come into the picture?

Texas Well in Hand

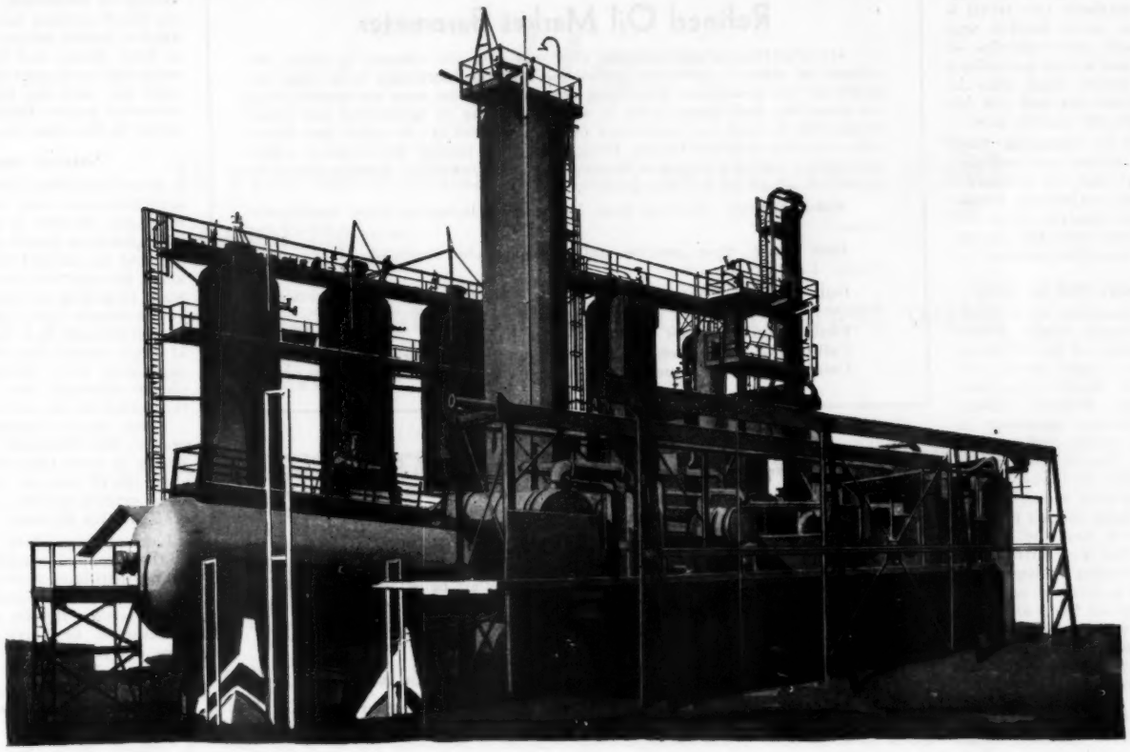
The order of the Texas Railroad Commission putting into effect the new law requiring manifests by all trucks hauling gasoline from refineries for delivery elsewhere furnishes means for checking the traffic in contraband gasoline within the state.

But, as in practically all other regulations in the past, this order will probably have to run the gamut of the courts. The first arrests and fines under the order will offer a test case.

The effects of this trucked gasoline have of late been limited to a few districts within Texas and have not seriously affected the general market. So, if the new order is delayed in operation by legal proceedings, the situation will not be materially changed.

Meanwhile, Attorney General McCraw has virtually impounded nearly a million barrels of confiscated oil which is to be sold by the state at public auction early in July unless the test suits before a three judge Federal court at Houston July 1 go against the state. In either event the outcome is not considered dangerous to the stabilization program which is now well in hand.

PROPANE DEASPHALTING AND DERESINATING BY KELLOGG



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Downright Remarkable Thing About the Group 3 Gasoline Market Is Way It Can Take It

By T. F. SMILEY

The downright remarkable thing about this Group 3 gasoline market is the way it can take it. If anybody can recall a year in which that same market was called upon to absorb more varieties of pestilential trouble and withal maintained a more hale and potent mien than in 1935, he has not come out and put his reminiscences before the public gaze.

There is no need of cataloging these troubles here. Every refiner and marketer knows them by heart and can enumerate them with blistering adjectival accompaniment. They have created worry and wakefulness. They have revealed strange and unsuspected descriptive powers.

Tomorrow's Disasters Fail to Arrive

But tomorrow's disasters never came. Instead of sinking wanly into a palsied decline under the weight of its afflictions gasoline flailed about right lustily and ever since the first of March it has been striding robustiously forward. Today there is almost unanimous agreement in the trade that the motor fuel market, which already has thrown last year's records into penumbra, is likely to put on another good show very soon.

Of course there remain at this moment the weather, unsettled, and the federal tax, also unsettled. But government records offer fairly convincing evidence that after inflicting upon a helpless populace the vilest combinations of flood and mud he could invent, the weather man always got ashamed of himself and tried to get back into favor by turning out just what motorists had been yearning for.

Nobody Expects Removal of Tax

As for the tax, nobody has been found who really believes this burden on the consumer of gasoline and lubricating oil will be lifted this year. True there is uneasiness, and there will continue to be until definite action has been taken in Washington. But only a few days of uncertainty remain.

With the tax matter out of the way and with sunny weather prevailing a period of excellent business in the Group 3 area is predicted. Inquiry discloses no excess stocks of gasoline anywhere in the Mid-Continent region, and this in the face of the fact that if there has been one pleasant week-end since the first of the year it has passed out of memory.

From East Texas recurring reports are heard of motor fuel looking for buyers. One explanation offered is that major refiners to whom East Texas independents have looked for removal of surplus stocks have not performed their job quite so assiduously as the integrated companies in the rest of the Mid-Continent similarly undertaking to keep distress stocks off the market. This has been a factor in the northern trade. Late last week, for instance, a few cars of East Texas material were picked up at 4½ cents Group 3 basis. When bargain-hunters heard about it and tried to get some for themselves they found none was available. East Texas gasoline which cannot obtain federal tenders is still being disposed of by truck to consumers inside the State.

Acting as a Balance

But with the northern Mid-Continent kept well cleaned up and with integrated companies frequently unable to fill their needs through inter-refinery buying, these companies have turned to the open market and through brokers have got what they wanted from East Texas.

The sold-out condition commonly prevailing in Oklahoma and other parts of the Mid-Continent has acted as a balance against serious accumulations of material in East Texas, and it was declared this week that with good motoring weather in sight and with the federal tax no longer bothering buyers East Texas itself might easily be the scene of a sellers' market.

Natural Gasoline Up

Notwithstanding that natural gasoline manufacturers are reported to frown upon any advance in prices at this time, 26-70 changed hands at 3⅛ cents, making that the official quotation. This came about through the fact that so much material is moving on contract that it leaves an extremely thin spot market, easily broken through by a little urgent demand. If there should be still further rise in quotations they presumably will bring larger offerings into the spot market, thus checking too precipitate advance.

There was no change in the stabilized grades. The 18-pound material had been selling at more than its normal premium above 26-70 because of the vigorous refined market spilling over into the natural gasoline division.

Kerosene was about the weakest thing in the Group 3 market this week. The lighter distillates were soft also, and like kerosene lost an eighth. The weakness of this group, though partly seasonal, is accentuated by torrential rains which have delayed plowing operations in agricultural districts.

The lubricants, affected in part by the same influences that tend to keep motor fuel from attaining the advanced position it should have, underwent no price changes in the past week, but manufacturers said a pickup might easily be witnessed in early July. Wax was dull, with no improvement expected till late summer.

Refined Oil Market Barometer

Gratification is expressed by observers over the manner in which the refined oil market, particularly gasoline and the lubricants have stood up under adverse conditions. Excepting areas where price wars are demoralizing the situation, indications point to a smart pickup in motor fuel and lubricating oils as soon as uncertainty over the federal tax is ended and favorable motoring weather begins. Eyes are turned toward Washington, where discussions among oil leaders looking to efforts toward a greater degree of market stabilization are taking place.

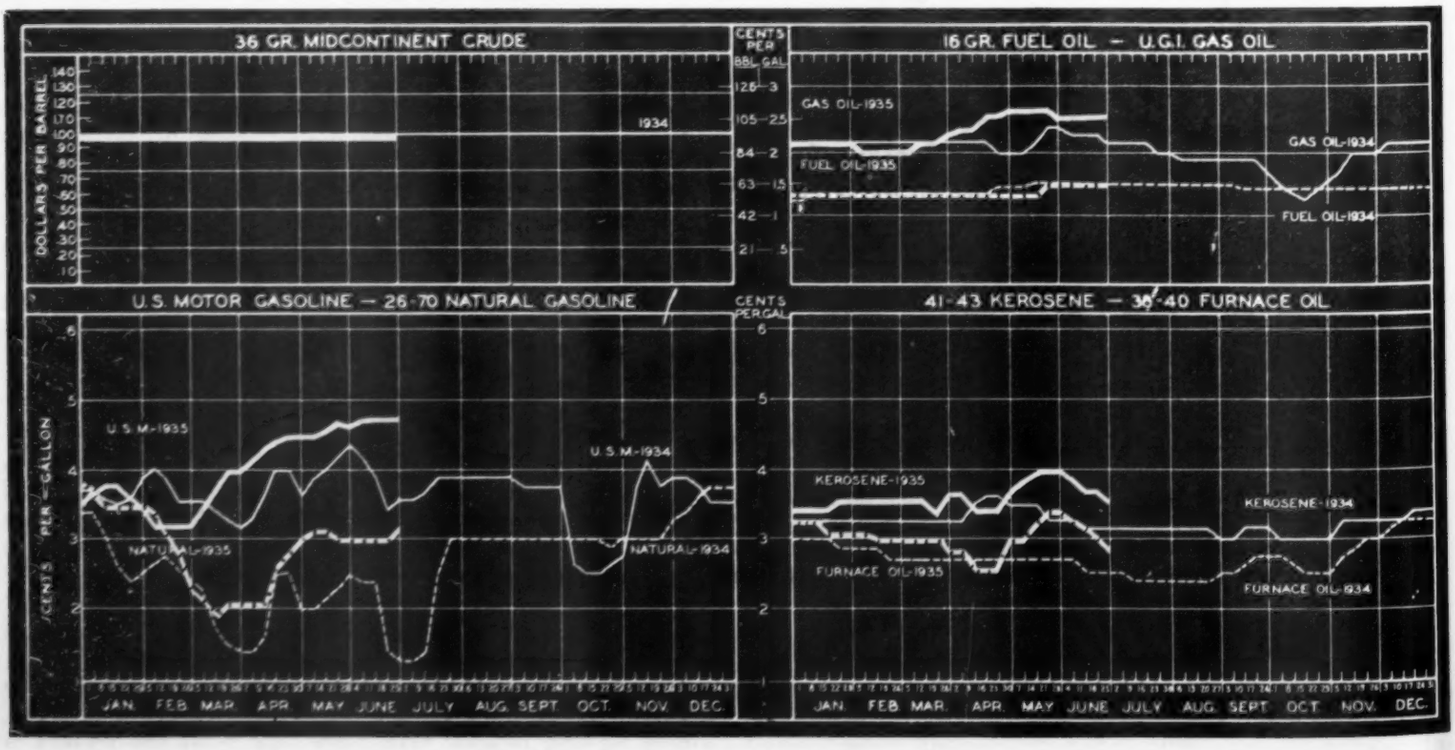
Mid-Continent—Gasoline firm. Natural up. Kerosene weak. Lubricants steady.

East Coast—Spot gasoline dull. Furnace oils unsettled. Heavy fuels steady. Lubricants quiet.

Gulf Coast—Gasoline firm. Kerosene plentiful and easier. Lubricants inactive.

Pennsylvania—Market quiet. Prices unchanged.
California—Market weak. Gasoline lower result of price war.
Chicago—Gasoline quiet. Kerosene easy. Furnace oils backward.

Representative Mid-Continent Quotations on Crude Oil and Refined Products Basis Oklahoma (Group 3)



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Price Cutting in Fuel and Furnace Oil in the East Upsets an Otherwise Fairly Good Market

By C. O. WILLSON
New York Bureau, The Oil and Gas Journal

NEW YORK, June 24.—Developments in fuel oil markets overshadowed other products in the Eastern refining area over the past week. Price cutting activities which have been apparent in the New York Harbor area since the first of the month brought a general reduction in the tank car quotations for the No. 4 furnace oil of three-eighths to one-half cent per gallon the latter part of last week. Some of the larger tank car sellers which have been quoting 4 cents for this grade reduced their price to 3⅝ cents and 3½ cents for small barge shipments. A few smaller sellers were reported to be quoting one-eighth cent under these prices.

In regard to the heavier oils representatives of American shipping interests held a meeting here which was attended by an official of the Merchant Fleet Corp. and protested present prices on bunker fuels. It was indicated that some formal action might be requested at a later date including a government investigation.

Among the remaining refinery products there was little change in domestic sales. Domestic gasoline quotations in New York Harbor appear firm although spot trading continues dull. Quotations at the Gulf Coast on gasoline were also unchanged. Some observers were of the opinion that this market was not as tight as it was earlier in the month.

Export Gasoline

More activity was reported in the Gulf export gasoline market at lower prices. One cargo of 64-66 375 was sold by a small coastal refiner at 5¼ cents to a French buyer for prompt shipment. The larger refiners and exporters were generally quoting one-eighth cent above this price. It was also understood that a European buyer purchased one cargo each of 390 and 400 endpoint at 5 cents. This price was also one-eighth to one-fourth cent lower than the general asking prices for these grades. It is said that these shipments represent excess material in the hands of sellers who required immediate business. It was predicted that with the sale of one or two more cargoes of similar material, that the market would tighten and quotations advance to their former levels. Rumanian prices are still above the Gulf quotations of American sellers.

An interesting feature of recent gasoline business at the Gulf has been the participation of representatives of the U.S.S.R. as buyers. It is said that the Russian situation is somewhat similar to that of certain Rumanian operators who are reported to have oversold for June and July delivery. In the case of the Russian representatives the need of gasoline material of certain specifications for use as blending material, has also been a factor in their purchases. Recent reports show that gasoline exports of the U.S.S.R. so far this year have been running behind 1934. Oil exports from U.S.S.R. in 1934 were below those of 1933.

Fuel Situation

Efforts are being made to bring about an orderly marketing situation in the sale of fuels in this territory—particularly those that come under the general classification of furnace oils. A meeting under the auspices of the Fuel Oil Association was held here last week with 600 in attendance. The unsatisfactory situation which exists in both tank car and tank wagon sales was reviewed and remedies suggested.

It is claimed that the trouble with the No. 4 market is partially due to the fact that it is used as a sort of dumping ground for overhead oils with considerable variation in specifications. The commercial standards as published by the National Bureau of Standards give more latitude as regards specifications for this grade than they do for the Nos. 1, 2 and 3 grades but even these specifications are not followed by a few sellers. The commercial standards provide for minimum flash of 150° F. and no maximum; 1.0 per cent maximum water and sediment and 500 maximum viscosity at 100° F.

Some sellers offer a No. 4 product which actually conforms to most of the specifications for No. 3 and they have been asking the same price for the two grades in tank car sales. This oil is suitable as fuel for many types of domestic oil burners. Other No. 4 oils do not measure up to these specifications but many buyers are not familiar with this fact. This confusion has been a factor in the slump in the market for the No. 4 grade while the Nos. 1 and 2 remain firm. It is also true that some of the No. 4 oil which has been offered by larger refiners at low prices meets the usual specifications for that grade. The explanation of these sales is that the refiners have considerable more oil of this grade in storage than they had a year ago and are anxious to find outlets both in spot and contract sales. Most observers were of the belief that this situation in regard to No. 4 will be ironed out within a week or two and prices return to their normal relationship to the other grades.

Heavy Fuels

The shipping interests in their complaint said that Bunker C fuel oil prices to the marine trade had jumped from a low of 60 cents to $1.15 per barrel, the present spot quotation in New York Harbor. It is pointed out that they failed to explain that the 60-cent price which prevailed for a short time in 1932 was abnormally low with no relation to actual costs. The average weekly prices per barrel for this product (Bunker C fuel oil, New York) over the past several years based on the quotations of The Oil and Gas Journal are as follows: 1934, $1.24; 1933, 86 cents; 1932, 72 cents; 1931, 83 cents; 1930, $1.09; 1929, $1.05; 1928, $1.19; 1927, $1.64; 1926, $1.74; 1925, $1.73. Ten-year average, $1.21.

This shows that the present price of $1.15 is below the 10-year average of $1.21 and far below the so-called normal years of the oil industry in the late twenties.

Changes in manufacturing methods and consumer markets are directly reflected in prices for residual fuels. However, nothing has developed that would justify the conclusion that the present prices are out of line with the cost of crude oil and all the factors that enter into the delivery of a barrel of oil to marine buyers. In fact advances rather than decreases are in prospect with continued improvement in the oil business, according to those in close touch with conditions who have in mind the large reductions in fuel oil stocks that have been necessary over the past two years to supply the demand. A factor in this situation, of course, is the import tax of 21 cents levied against imported fuel oil and crude oil.

The heavy fuel market in the New York Harbor is steady. Early in the month there were predictions that Bunker C prices would advance to $1.30 from the present level of $1.15 and the top price was inserted in some contracts. Incidentally in regard to prices, there are still important long time contracts with shipping concerns in which the buyers are paying less than $1 for their bunker fuel. These contracts were made in previous years when spot quotations were at lower levels.

Diesel Oil Prices

Prices on Diesel fuel to the marine trade at $1.65 are steady following the reduction from $1.89 of the previous week. The Standard Oil Co. of New Jersey also made revisions downward on Diesel at other distributing points along the Atlantic Seaboard and the West Indies. Its new price list as of June 17 shows the following quotations at representative points not including lighterage charges: New York, Baltimore, Norfolk, Va., Charleston, S. C., Providence, R. I., Boston, Mass., and Philadelphia, Pa., $1.65; New London, Conn., and Providence, R. I., $1.75; Gulf Coast, all points, $1.50, with the exception of Sabine, Tex., which is $1.60; Cristobal and Balboa, Panama, $1.55; St. Thomas, V. I., Curaco, Aruba, and Trinidad, Dutch West Indies, and Kingston, Jamaica, $1.55. West Indies prices are in U. S. currency.

The demand for gas oil from gas companies and other buyers has slowed up somewhat but prices are unchanged. It was predicted that the sharp drop in No. 4 furnace oil prices would bring a reduction in U.G.I. material generally quoted at 4 cents. The same situation applies to industrial fuels which have been quoted in New York Harbor in tank car lots at 3¾ to 4 cents.

Lubricants and Wax

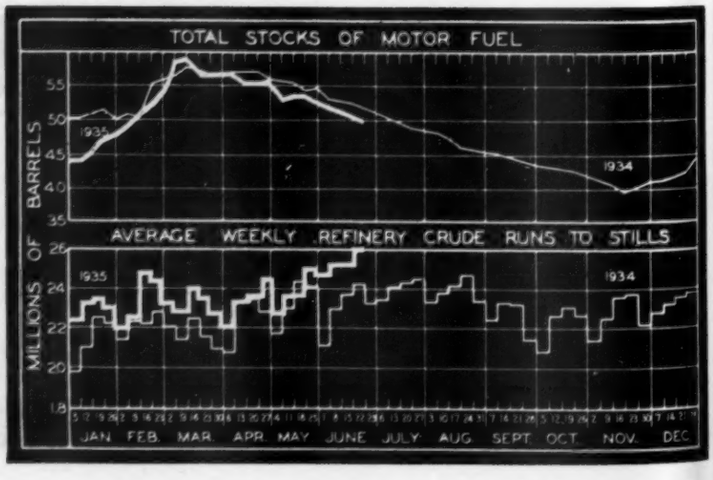
Lubricants of all grades and classes for both domestic and export movement are generally termed "quiet" by those in touch with markets.

Sellers are predicting further advances in price for steam refined and bright stocks. Two sellers reported more activity in the export demand for crude scale wax. Another seller said that the shipments of his company on the high melting point refined wax had improved since the first of the month. Prices are unchanged.

American Petroleum Institute Weekly Refinery Statistics

Week Ending June 22, 1935

	Capacity reporting per cent	Daily crude runs (bbls.)	Finished motor fuel (bbls.)	Gas oil and fuel oil (bbls.)
East Coast	100.0	482,000	16,174,000	11,174,000
Appalachian	94.8	119,000	2,209,000	777,000
Indiana, Illinois, Kentucky	95.9	385,000	9,058,000	4,501,000
Oklahoma, Kansas, Missouri	84.8	281,000	4,925,000	4,370,000
Inland Texas	48.5	102,000	1,127,000	2,000,000
Texas Gulf	96.4	566,000	5,053,000	9,944,000
Louisiana Gulf	96.4	113,000	1,168,000	3,717,000
North Louisiana and Arkansas	90.0	47,000	262,000	349,000
Rocky Mountain	61.9	49,000	928,000	817,000
California	92.6	462,000	9,221,000	64,044,000
Total United States	89.5	2,606,000	50,125,000	101,693,000



REFINERY AND CRUDE PRICES

Quotations on refined products are for interstate or export movement except as otherwise noted

The following quotations are exclusive of the federal excise taxes of 1 cent a gallon on gasoline and 4 cents on lubricating oils.

Refinery Gasoline

	June 25		June 18	
OKLAHOMA (Group 3)—				
U. S. Motor grades:				
Below 63 octane	.04¾	.04⅞	.04¾	.04⅞
63-70 octane	.05⅝	.05¾	.05⅝	.05¾
60-62 400 grade:				
Below 63 octane	.04¾	.04⅞	.04¾	.04⅞
63-70 octane	.05⅝	.05¾	.05⅝	.05¾
64-66 375	.04⅞	.05	.04⅞	.05
68-70 360	.05	.05⅛	.05	.05⅛
NORTH TEXAS—				
U. S. Motor grades:				
Below 63 octane	.04¾	.04⅞	.04¾	.04⅞
63-70 octane	.05⅝	.05¾	.05⅝	.05¾
60-62 400	.04¾	.04⅞	.04¾	.04⅞
64-66 375	.04⅞	.05	.04⅞	.05
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.05½		.05¼	
63-70 octane	.06¼		.06	
60-62 400	.05½		.05¼	
ARKANSAS (Ark., N. La. & Miss. del.)—				
U. S. Motor grades:				
Below 63 octane	.05½		.05¼	
63-70 octane	.06¼		.06	
CHICAGO (based on Group 3)—				
U. S. Motor grades:				
Below 63 octane	.04¾	.04⅞	.04¾	.04⅞
63-70 octane	.05⅝	.05¾	.05⅝	.05¾
60-62 400	.04¾	.04⅞	.04¾	.05
64-66 375	.04⅞	.05	.04⅞	.05
68-70 360	.05	.05⅛	.05	.05⅛
Aviation fighting grade	.05¾	.05⅞	.05¾	.05⅞
PENNSYLVANIA (inland refineries)—				
58-60 U. S. Motor:				
Below 60 octane	.06		.06	
60-64.9	.07		.07	
65-70 octane	.07¼		.07¼	
64-66 375	.06⅜		.06⅜	
68-70 350	.06⅞		.06⅞	
CALIFORNIA (domestic movement)—				
54-58 U. S. Motor	.05	.06	.05½	.06¼
58-60 400	.06	.07	.06¼	.06¾
EAST COAST—				
U. S. Motor, below 60 octane:				
*New York (Bayonne)	.05¾		.05¾	
Baltimore	.05¾		.05¾	
U. S. Motor, 60-64.9 octane:				
*New York (Bayonne)	.06		.06	
Philadelphia	.06	.06¼	.06	.06¼
Boston	.06		.06	
Baltimore	.06	.06¼	.06	.06¼
Charleston, S. C.	.06		.06	
U. S. Motor, 65 and above:				
*New York (Bayonne)	.06¼		.06¼	
Philadelphia	.06¼	.06½	.06¼	.06½
Boston	.06¼		.06¼	
Baltimore	.06¼		.06¼	
Charleston, S. C.	.06¼		.06¼	

*All grades of gasoline one-fourth cent less for small barge shipments.

GULF COAST (domestic)—				
U. S. Motor:				
Below 60 octane	.05	.05¼	.05	.05¼
60-64.9 octane	.05¼	.05½	.05¼	.05½
65 octane and higher	.05½		.05½	

Naphtha

	June 25	June 18
PENNSYLVANIA (inland refineries)—		
50-52 450 (blending)	.05⅞	.05⅞
52-54 450 (blending)	.05⅞	.05⅞
54-56 450 (blending)	.06	.06

CHICAGO (based on Group 3)—				
50-52 450 (blending)	.04¾	.05	.04¾	.05
Cleaners' naphtha, 56-58 gr., 200 i.b.p., 320 e.p.	.06⅞	.07	.06⅞	.07
Lacquer diluent, 180 i.b.p., 250 e.p.	.07⅞	.08	.07⅞	.08
Lacquer diluent, 140 i.b.p., 200 e.p.	.08⅞	.09	.08⅞	.09
Rubber solvent, 68-70 gr., 100 i.b.p., 300 e.p.	.06⅞	.07	.06⅞	.07
Stoddard solvent, 300 i.b.p., 410 e.p., over 83° flash	.06⅝	.06½	.06⅝	.06½
Pet. thinner, 290-300 i.b.p., 410 e.p., over 83° flash	.06⅝	.06½	.06⅝	.06½
V.M.&P. naphtha, 56-58 gr., 190-200 i.b.p., 330 e.p.	.06⅞	.07	.06⅞	.07
Petroleum spirits	.05⅞	.06	.05⅞	.06

Natural Gasoline

	June 25		June 18	
OKLAHOMA (Group 3)—				
Grade 26-70	.03⅛		.03	.03⅛
Grade 18-55	.03⅝	.04	.03¾	.04
Low vapor pressure grades:				
14 lb. v.p. (max.)	.04¼	.04½	.04¼	.04½
12 lb. v.p. (max.)	.04⅝	.04¾	.04⅝	.04¾
NORTH TEXAS—				
Grade 26-70	.03⅛		.03	
Grade 18-55	.03¾	.03⅞	.03¾	.03⅞
Low vapor pressure grades:				
*14 lb. v.p. (max.)	.04¼	.04⅜	.04¼	.04⅜
*12 lb. v.p. (max.)	.04⅝		.04⅝	

*Nominal.

NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
Grade 26-70	.03¼		.03¼	
CALIFORNIA—				
75-85 375-390	.04¾	.06	.04¾	.06

Kerosene

(All kerosene water white)

	June 25		June 18	
OKLAHOMA (Group 3)—				
41-43	.03⅝	.03¾	.03¾	.03⅞
42-44	.03¾	.03⅞	.03⅞	.04
NORTH TEXAS—				
41-43	.03⅝	.03¾	.03¾	.03⅞
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
41-43	.04		.04⅛	
ARKANSAS (Ark., N. La. & Miss. del.)—				
41-43	.04		.04¼	
PENNSYLVANIA (inland refineries)—				
45	.04¾		.04¾	
46	.04⅞		.04⅞	
47	.05		.05	
CHICAGO (based on Group 3)—				
41-43	.03⅝	.03⅞	.03¾	.04
42-44	.03⅞	.04	.04	.04¼
CALIFORNIA (Pacific Coast consumption)—				
38-40 high burning test	.04¼	.05¼	.04½	.05
NEW YORK (Bayonne, N. J.)—				
41-43	.05		.05	
GULF COAST (domestic)—				
41-43	.04¼	.04½	.04¼	.04½

Petroleum Coke

(Prices per ton f.o.b. refineries in Chicago area)
(Refineries will absorb freight to 80 cents a ton)

	June 25	June 18
Pile run	6.00	6.00
Direct from still	7.00	7.00
Egg, nut, pea	8.00	8.00
Lump	8.00	8.00

Furnace Oil

	June 25		June 18	
OKLAHOMA (Group 3)—				
No. 1 prime white, 38-42	.03	.03¼	.03⅛	.03⅜
No. 1 straw, 38-40	.02⅞	.03⅛	.03	.03¼
No. 2 straw, 32-36	.02¾	.03	.02¾	.03
No. 2 dark, 32-36	.02⅝	.02¾	.02⅝	.02¾
No. 3, 28-32	.02½	.02¾	.02½	.02¾
No. 3, 15 and above, 28-32	.02⅞	.02½	.02⅞	.02½
NORTH TEXAS—				
No. 1 prime white, 38-42	.03⅛	.03¼	.03¼	.03½
No. 1 straw, 38-40	.03	.03¼	.03⅛	.03⅜
NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
No. 2, 32-36	.03⅛	.03¼	.03⅛	.03¼
ARKANSAS (Ark., N. La. & Miss. del.)—				
No. 2, 32-36	.03½		.03¼	
No. 3, 28-32	.03¼		.03¼	
CHICAGO (based on Group 3)—				
No. 1 prime white, 38-40	.03¼	.03⅜	.03¼	.03½
No. 1 straw, 38-40	.03⅛	.03¼	.03⅛	.03⅜
No. 2 straw, 32-36	.02⅞	.03	.03	.03⅛
No. 2 dark, 32-36	.02¾	.02⅞	.02⅞	.03
No. 3 zero to 15, 28-32	.02½	.02⅝	.02½	.02⅝
No. 3, 15 and above, 28-32	.02⅞	.02¼	.02⅝	.02¼
NEW YORK (Bayonne, N. J.)—				
No. 1	.05		.05	
No. 2	.04		.04	
No. 4	.03⅝		.04	

Gas Oil and Fuel Oil

(Gas oil per gal., fuel oil per bbl.)

	June 25		June 18	
OKLAHOMA (Group 3)—				
U.G.I. gas oil	.02½	.02⅝	.02½	.02⅝
No. 4, 24-28	.87½	.90	.87½	.90
No. 4, 15 and above, 24-28	.75	.80	.75	.80
No. 5	.70	.75	.70	.75
No. 6	.67½	.70	.67½	.70
Below 18 fuel oil, industrial	.65	.67½	.65	.67½
NORTH TEXAS—				
U.G.I. gas oil	.02½	.02⅝	.02½	.02⅝
No. 4, 24-28	.87½	.90	.87½	.90
No. 5	.72½	.75	.72½	.75
No. 6	.67½	.70	.67½	.70
Below 18 fuel oil, industrial	.65	.67½	.65	.67½

NORTH LOUISIANA (Ark., N. La. & Miss. del.)—				
U.G.I. gas oil	.02⅞	.03	.02⅞	.03
10-14 fuel oil, industrial	.75	.80	.75	.80
ARKANSAS (Ark., N. La. & Miss. del.)—				
10-14 fuel oil, industrial	.60	.65	.60	.65
CHICAGO (based on Group 3)—				
U.G.I. gas oil	.02⅜	.02½	.02⅜	.02⅝
No. 4, 24-28	.87½	.90	.87½	.90
No. 4, 15 and above 24-28	.72½	.77½	.72½	.77½
No. 5, 18-22	.67½	.70	.67½	.70
No. 6, 10-16	.57½	.60	.57½	.60

Note: Fuel oils of more than 40 cold test generally 5 to 15 cents per barrel in all these areas.

PENNSYLVANIA (inland refineries)—				
36-40	.04⅛	.04¼	.04⅛	.04¼
CALIFORNIA—				
Los Angeles:				
30-34 gas oil, per bbl.	1.05	1.25	1.05	1.25
27 plus Diesel	1.05	1.25	1.05	1.25
27 plus Diesel (bunkers)	1.25	1.30	1.25	1.30
12-16 (bunkers at tidewater)	.87	.95	.89	.95
10-16 (cargo lots)	.75	.92	.75	.90
12-17 (tank cars)	.60	.95	.60	.95
San Joaquin Valley:				
10-18 (tank cars)	.55	.75	.60	.75
San Francisco:				
27 plus Diesel, per bbl.	1.25		1.25	
27 plus Diesel (bunkers)	1.35		1.35	
10-16 (bunkers)	1.00		1.00	
GULF COAST—				
28-30 gas oil	.03½	.03⅝	.03½	.03⅝
28-30 Diesel (bunkers)	1.70		1.70	
Bunker C (bulk cargoes)	.85	.90	.85	.90
Bunker C (bunkers)	.95	1.00	.95	1.00
NEW YORK (Bayonne, N. J.)—				
27 plus, gas oil	.04	.04¼	.04	.04¼
28-30 Diesel (lighterage 6½ cents per bbl.)	1.65		†1.65	
28-30 Diesel (tank cars)	.04	.04¼	.04	.04¼
*Bunker C (to ocean-going ships in N. Y. harbor)	1.15		1.15	
Industrial fuel (tank cars)	.03⅝		.04	

*Lighterage charge 5 cents per barrel additional.
†The price for June 18 was incorrectly published as $1.89. This price change became effective June 15.

Neutral Oil

(Vis. at 100° F. except Pennsylvania and color N.P.A.)

	June 25		June 18	
OKLAHOMA (Group 3)—				
Zero to 10 Cold Test:				
150-3	.10		.10	
180-3	.11¼		.11¼	
180-4	.10¾		.10¾	
200-3	.11¾		.11¾	
200-4	.11¼		.11¼	
240-3	.13¾		.13¾	
240-4	.13¼		.13¼	
280-3	.14¾		.14¾	
280-4	.14		.14	
300-3½	.15¼		.15¼	
400-4	.17¼		.17¼	
100-2 paraffin oil	.05¾		.05¾	
15-20 Cold Test:				
200-3	.10¾		.10¾	
200-4	.10¼		.10¼	
240-3	.12¾		.12¾	
240-4	.12¼		.12¼	
280-3	.13¾		.13¾	
280-4	.13		.13	
GULF COAST—				
Pale Oils:				
200-3	.07	.07½	.07	.07½
300-3	.07½	.08	.07½	.08
500-3½	.08½	.09	.08½	.09
750-3½	.09	.09¼	.09	.09¼
1,200-3½	.09½	.09¾	.09½	.09¾
2,000-4	.09¾	.10	.09¾	.10
Red Oil:				
200-5-6	.07	.07¼	.07	.07¼
300-5-6	.07¼	.07½	.07¼	.07½
500-5-6	.08	.08½	.08	.08½
750	.08½	.09	.08½	.09
1,200-5-6	.09¼	.09½	.09¼	.09½
CALIFORNIA (moving to domestic market)—				
Pale Oils:				
100-2½-3	.07½	.07¾	.07½	.07¾
200-2½-3	.08	.08¾	.08	.08¾
300-3-3½	.09	.10	.09	.10
350-3-4	.10½	.11	.10½	.11
400-3-4	.12	.12¼	.12	.12¼
450-3-4	.12½	.12¾	.12½	.12¾
550-3-4	.13	.13½	.13	.13½
600-3-4	.13½	.14	.13½	.14
Red Oils:				
200-4-5	.08½	.09	.08½	.09
300-5-6	.09		.09	
350-5-6	.10	.10¼	.10	.10¼

400-5-6	.10½	.10¾	.10½	.10¾
450-5-6	.11	.11¼	.11	.11¼
500-5-6	.11½	.11¾	.11½	.11¾
600-5-6½	.12	.12¾	.12	.12¾
700-6½ plus	.13	.13¼	.13	.13¼
750-6½ plus	.13½	.13¾	.13½	.13¾
900-6½ plus	.14	.14½	.14	.14½
PENNSYLVANIA—				
150 vis. at 70° F., 3 color, 400-405 flash:				
Zero pour test	.20½	.21	.20½	.21
10 pour test	.19½	.20	.19½	.20
15 pour test	.19	.19½	.19	.19½
25 pour test	.18	.18½	.18	.18½
180 vis., at 70° F., 3 color:				
20 pour test	.21	.21½	.21	.21½
200 vis. at 70° F., 3 color:				
Zero pour test	.25½	.26	.25½	.26
10 pour test	.24½	.25	.24½	.25
15 pour test	.24	.24½	.24	.24½
25 pour test	.23	.23½	.23	.23½

Bright and Steam Refined Stocks

OKLAHOMA (Group 3)—	June 25		June 18	
Bright Stocks:				
190-200 D	.18		.18	
150-160 D, 0-10	.15		.15	
150-160 D, 10-25	.14½		.14½	
150-160 25-40	.14		.14	
150-160 E	.14		.14	
Steam refined:				
630 green (treated)	.09½		.09½	
600 light green (untreated)	.08½		.08½	
600 dark green (untreated)	.05	.06	.05	.06
PENNSYLVANIA—				
Bright Stocks (Pennsylvania grade, No. 8 color, 145-50 at 510; 540-550 flash):				
10 pour test	.20	.20½	.20	.20½
15 pour test	.19	.19½	.19	.19½
20 pour test	.18	.18½	.18	.18½
25 pour test	.17	.17½	.17	.17½
Steam refined:				
600	.09½	.10	.09½	.10
650	.11	.11½	.11	.11½
600 Pennsylvania flash	.12	.12½	.12	.12½
630 flash	.17	.17½	.17	.17½
600 Warren E filtered	.13	.13½	.13	.13½

Wax and Petrolatum

(Prices per pound)

OKLAHOMA (Group 3)—	June 25		June 18	
124-126 (a.m.p.) w.c. scale	.02	.02⅛	.02	.02⅛
PENNSYLVANIA (inland refineries)—				
122-124 (a.m.p.) w.c. scale	.0210	.0215	.0210	.0215
124-126 (a.m.p.) w.c. scale	.0215	.0220	.0215	.0220
NEW YORK—				
Wax in bags fully refined:				
123-125 (a.m.p.) wax	.0420		.0420	
125-127 (a.m.p.) wax	.0430		.0430	
128-130 (a.m.p.) wax	.0455		.0455	
130-132 (a.m.p.) wax	.0470		.0470	
133-135 (a.m.p.) wax	.0530		.0530	
135-137 (a.m.p.) wax	.0555		.0555	
124-126 (a.m.p.) w.c. scale	.0205	.0220	.0205	.0220
124-126 (a.m.p.) y.c. scale	.0205	.0215	.0205	.0215
Petrolatum in barrels, carload lots:				
Dark green	.01⅞		.01⅞	
Amber	.02⅞	.03	.02⅞	.03
Extra amber	.03	.03⅛	.03	.03⅛
Lily white	.06⅝	.06¾	.06⅝	.06¾
Snow white	.07¾	.07⅞	.07¾	.07⅞
Cream	.05⅝	.05¾	.05⅝	.05¾
CHICAGO (f.o.b. switching district)*—				
122-124 (a.s.t.m.) wax	.0440	.0450	.0440	.0450
125-127 (a.s.t.m.) wax	.0465	.0475	.0465	.0475
127-129 (a.s.t.m.) wax	.0480	.0490	.0480	.0490
130-132 (a.s.t.m.) wax	.0540	.0550	.0540	.0550
132-134 (a.s.t.m.) wax	.0565	.0575	.0565	.0575

*Carload lots in burlap bags of approx. 225 lbs. Add 3° for a.m.p.

Export Prices

GASOLINE

GULF COAST—	June 25		June 18	
U. S. Motor	.05		.05⅛	.05¼
60-62 400	.05	.05⅛	.05¼	
61-63 390	.05	.05⅛	.05¼	.05⅜
64-66 375	.05¼	.05⅜	.05⅜	.05½
LOS ANGELES:				
U. S. Motor grades:				
53-55 octane	.04		.04	
55-65 octane	.04	.04¼	.04	.04¼
65-67 octane	.04¼	.04½	.04¼	.04½
67-69 octane	.04½	.04¾	.04½	.04¾
Above 69 octane	.04¾	.05	.04¾	.05
58-60 400 endpoint	.04½	.05	.04½	.05
KEROSENE				
GULF COAST—				
41-43 prime white	.03⅞	.04	.03⅞	.04
41-43 water white	.04	.04¼	.04	.04¼
44 water white	.04¼		.04¼	
LOS ANGELES:				
41-43 water white	.04½	.05	.04½	.05
LUBRICANTS				
NEW YORK (f.a.s. in bbls.)—				
Cylinder Stocks:				
600 Warren E	.20		.20	
600 S.R. unfiltered	.16½	.17	.16½	.17
650 S.R. unfiltered	.18		.18	
600 flash S.R.	.19	.19½	.19	.19½
630 flash S.R.	.24	.24½	.24	.24½
Bright Stocks:				
8 color	.24		.24	
6½ plus colors in dilution	.22½		.22½	
NEUTRAL OIL				
200-3 color	.28	.30	.28	.30
150-3 color	.23	.25	.23	.25
PARAFFIN WAX				
NEW YORK (prices per pound):				
123-125 a.m.p.	.03625		.03625	
125-127 a.m.p.	.0375		.0375	
128-130 a.m.p.	.0400		.0400	
130-132 a.m.p.	.0425	.0450	.0425	.0450
133-135 a.m.p.	.0475		.0475	
135-137 a.m.p.	.05		.05	
Crude scale:				
124-126 w.s.	.0205	.0215	.0205	.0215
124-126 y.s.	.0200	.0210	.0205	.0210

Crude Oil Gravity Table

Gravity—	Oklahoma and Kansas 1	North Texas, Central Texas and East Central Texas 2	North Louisiana and Arkansas 3	Gray County, Texas 4	Carson, Hutchinson and Moore Counties, Texas 5	Conroe, Texas 6	Salt Creek, Wyo. 7	Gulf Coast, Texas and Louisiana 8	Gulf Coast Texas and Louisiana 9	Cotton Valley, Louisiana 10
Below 20	....	....	....	....	....	....	....	$.82	$.82	....
20-20.9	....	....	....	....	....	....	....	.84	.84	....
21-21.9	....	....	....	....	....	....	....	.86	.86	....
22-22.9	....	....	....	....	....	....	....	.88	.88	....
23-23.9	....	....	....	....	....	....	....	.90	.90	....
24-24.9	....	....	....	....	....	....	....	.92	.92	....
Below 25	*$.76	....	....	....	....	....	....	....	....	$.70
25-25.9	*.78	....	....	....	....	....	....	.94	.94	.72
26-26.9	*.80	....	....	....	....	....	....	.96	.96	.74
27-27.9	*.82	....	....	....	....	....	....	.98	.98	.76
28-28.9	*.84	....	....	....	....	....	....	1.00	1.00	.78
Below 29	.84	$.79	$.79	....	....	....	$.84	....	....	....
29-29.9	.86	.81	.81	....	....	....	.86	1.02	1.02	.80
30-30.9	.88	.83	.83	....	....	....	.88	1.04	1.04	.82
31-31.9	.90	.85	.85	....	....	....	.90	1.06	1.05	.84
32-32.9	.92	.87	.87	....	....	....	.92	1.08	1.06	.86
33-33.9	.94	.89	.89	....	....	....	.94	1.10	1.07	.88
34-34.9	.96	.91	.91	....	....	....	.96	1.12	1.08	.90
Below 35	....	....	....	$.79	$ 69	....	....	....	....	....
35-35.9	.98	.93	.93	.81	.71	$1.09	.98	1.12	1.09	.92
36-36.9	1.00	.95	.95	.83	.73	1.11	1.00	1.12	1.10	.94
37-37.9	1.02	.97	.97	.85	.75	1.13	1.02	1.12	1.11	.96
38-38.9	1.04	.99	.99	.87	.77	1.15	1.04	1.12	1.12	.98
39-39.9	1.06	1.01	1.01	.89	.79	1.17	1.06	1.12	1.13	1.00
40 and over	1.08	1.03	1.03	.91	.81	1.19	1.08	1.12	1.14	1.02

Effective December 3, 1934, Panhandle Refining Co., purchasing oil in North Texas, posted below 29 degrees, 68 cents; 29-29.9 degrees, 70 cents, with 2 cents added for each additional degree up to 40 and over, 92 cents.

*The following companies purchasing crude oil in Kansas or Oklahoma, or both, begin their price schedule: Below 25°, 76 cents; 25-25.9°, 78 cents, with 2 cents added for each degree upward to 40 and over at $1.08; Carter Oil Co., Magnolia Petroleum Co., Pure Oil Co., Rock Island Refining Co., Shell Petroleum Corp., Sinclair Prairie Oil Marketing Co., Skelly Oil Co., and Wilcox Oil & Gas Co. All others begin their schedules at below 29°, 84 cents, excepting Philtex Oil Co., which begins with below 31° at 88 cents.

Column 1—Effective September 29, 1933, Texas Co. of Oklahoma; Stanolind Crude Oil Purchasing Co. in Kansas and Oklahoma; Anderson & Prichard, Inc., in Oklahoma; Bell Oil & Gas Co. in Oklahoma; Carter Oil Co. in Oklahoma and Kansas; Deep Rock Oil Co. in Oklahoma; Derby Oil Co. in Kansas; Globe Refining Co. in Oklahoma; Golden Rule Refining Co. in Kansas; Gypsy Oil Co. in Oklahoma and Kansas; Kanotex Refining Co. in Kansas; Magnolia Petroleum Co. in Oklahoma; Mid-Continent Petroleum Corp. in Oklahoma; National Refining Co. in Kansas and Oklahoma; Shell Petroleum Corp. in Kansas and Oklahoma; Sinclair Prairie Oil Marketing Co in Kansas and Oklahoma; Texas Co. in Oklahoma; Tide Water Oil Co. in Oklahoma; Vickers Refining Co. in Kansas; Continental Oil Co. in Kansas and Oklahoma; Empire Pipe Line Co. in Oklahoma and Kansas; Philtex Oil Co. in Kansas and Oklahoma; Pure Oil Co. in Oklahoma; Skelly Oil Co. in Kansas. Effective September 29, by White Eagle Oil Corp. in Kansas; October 1, by Barnsdall Refineries, Inc., in Oklahoma.

Column 2—Effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Sinclair Prairie Oil Marketing Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Bell Oil & Gas Co., Continental Oil Co. Effective January 14, 1935, in the Van Pool, Van Zandt County, Pure Oil Co. posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03.

Column 3—Effective September 29, 1933, by Texas Co., Magnolia Petroleum Co., Gulf Refining Co. Effective December 22, Stanolind Oil & Gas Co. in Pine Island, Louisiana, and Marion County, Texas, posted below 29°, 79 cents, with 2 cents added for each degree up to 40 and over at $1.03. Effective March 17, 1934, by Standard Oil Co. of Louisiana and Louisiana Oil Refining Co. Starting with below 35°, 71 cents, adding 2 cents for each degree upward to 40 and over at $1.03.

Column 4—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Magnolia Petroleum Co., Sinclair Prairie Oil Marketing Co., and H. F. Wilcox Oil & Gas Co. On same day, Philtex Oil Co. posted below 31°, 71 cents, with 2 cents added for each degree up to 40 and over at 91 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 5—Effective September 29, 1933, by Texas Co., Humble Oil & Refining Co., Gulf Pipe Line Co., Magnolia Petroleum Co., Wilcox Oil & Gas Co., Continental Oil Co. On same day, Philtex Oil Co. posted below 31°, 61 cents, with 2 cents added for each degree upward to 40 and over at 81 cents. Effective June 1, 1934, Texas Co. (see note above).

Column 6—Effective September 29, 1933, by Humble Oil & Refining Co. and Tide Water Oil Co., and on September 30 by Texas Co., which on September 29 had posted a schedule of $1.07 to $1.12 with a 1-cent spread on each degree.

Column 7—Effective September 29, 1933, by Stanolind Oil & Gas Co.

Column 8—Effective September 29, 1933, by Humble Oil & Refining Co., Gulf Pipe Line Co., Shell Petroleum Corp., Pure Oil Co., Sinclair Prairie Oil Marketing Co. On October 2, Magnolia Petroleum Co. posted Lockport, Louisiana, 29-29.9°, 84 cents, with 2 cents added for each degree upward to 34 and over at $1.12; and in Cameron Meadows and Iowa, Louisiana, below 29°, 72 cents, with 2 cents added for each degree up to 34 and over at $1.02. These prices were 2 cents higher on each degree than Magnolia prices posted on September 29. Effective September 29, Shell Petroleum Corp. posted in Iowa, Louisiana, district: Below 29°, 70 cents, with 2 cents added for each degree upward to 34° and over at $1; and in Black Bayou and White Castle, Louisiana: Below 29°, 80 cents, with 2 cents added for each degree upward to 34° and over at $1.10.

Column 9—Effective September 30, 1933, Texas Co. (On September 29 Texas Co. has posted a schedule of 2 cents on each degree, but changed it on September 30.)

Column 10—Effective September 29, 1933, by Louisiana Oil Refining Co.

(California Crude Oil Prices on Page 61)

Crude Oil Prices

Oklahoma, Kansas, North Central and East Central Texas

East Texas $1.00
Corsicana (heavy) (June 17, 1933)* ..... .80
Other fields ..... (See gravity table)

Note—In East Texas, effective September 29, 1933, by Texas Co., Stanolind Crude Oil Purchasing Co., Humble Oil & Refining Co., Shell Petroleum Corp., Gulf Pipe Line Co., Tide Water Oil Co., Sinclair Prairie Oil Marketing Co., Magnolia Petroleum Co., Sun Oil Co., Panola Pipe Line Co., Empire Oil & Refining Co., and Atlas Pipe Line Co. posted 40 cents per barrel in East Texas but on November 3 resumed its posted price of $1 per barrel, making it retroactive to October 22.

*Magnolia Petroleum Co.

West Texas

Crane, Upton, Crockett, Howard, Glasscock, Mitchell (Sept. 29, 1933) ..... $ .70
Ector, Winkler and Pecos Counties and Lea County, New Mexico (Sept. 29, 1933) ..... .75
Pecos County, Yates shallow Pool (Sept. 29, 1933)* ..... .85
Jones and Fisher Counties* ..... See gravity table

Note—Effective September 29, 1933, by Humble Oil & Refining Co., Texas Co., Gulf Pipe Line Co., Shell Petroleum Corp., Magnolia Petroleum Co., and by Stanolind Oil & Gas Co. in Winkler County, Texas.

*Shell Petroleum Corp.

Gulf Coast

Grade A and Grade B specification discontinued by leading buyers.

..... (See gravity table)
Tomball (see note)* $1.10
Livingston (Sept. 29, 1933)† 1.00
Cleveland (Jan. 11, 1934) 1.00
Greta (Sept. 29, 1933) ..... .85
Refugio, light ..... (See gravity table)
Refugio, heavy (Sept 29, 1933)‡ ..... .81
Markham and High Island ..... (See Gulf Coast gravity table)
Conroe ..... (See Conroe gravity table)
Bosco, La. (Jan. 16, 1935)§ ..... $ .90

Note—Tomball, effective September 29, by Humble Oil & Refining Co. and October 1 by Magnolia Petroleum Co., and November 10 by Stanolind Crude Oil Purchasing Co.

*Greta posted by Texas Co. †Shell Petroleum Corp. ‡Refugio heavy by Humble Oil & Refining Co. Cleveland (Liberty County) posted by Magnolia Petroleum Co. §Bosco posted by Pure Oil Co.

South Central and Southwest Texas

(See note below table)

Darst Creek ..... $ .87
Mirando ..... .80
Luling (Sept. 29, 1933) ..... .75
Pettus 1.00
Salt Flat ..... .87
Lytton Springs (Sept. 29, 1933) ..... .80
Duval County (Sept. 29, 1933) ..... .80
Saxet ..... .85

Note—Effective on September 29 by Humble Oil & Refining Co. in Darst Creek, Mirando, Pettus, Salt Flat and Saxet. Effective September 29 in Darst Creek by Gulf Pipe Line Co. and Texas Co. Effective October 2 by Magnolia Petroleum Co. Effective in Pettus and Salt Flat on September 29 by Humble Oil & Refining Co. and Gulf Pipe Line Co. Luling and Lytton Springs by Magnolia Petroleum Co. Duval County by Texas Co. Saxet, effective September 29 by

(Continued on Page 61)

TANK WAGON MARKETS

Quotations for gasoline and kerosene in United States, as furnished by the larger marketing concerns, include taxes

June 25, 1935

Taxes

The gasoline quotations given in the following tables include the 1-cent federal tax, as well as state, county and city taxes. The gasoline quoted is the regular or standard grade. In most marketing areas a third grade and a premium grade are also available.

Discounts

Under the standard form of commercial consumer contract which went into effect March 1, 1934, save in California, Oregon, Washington, Arizona and Nevada, a discount of 1 cent a gallon off tank wagon or 3 cents a gallon off retail prices is permitted for purchases running between 4,000 and 10,000 gallons a month, or 4 cents a gallon off retail prices for purchases in lots of more than 10,000 gallons a month. The minimum delivery is 25 gallons.

Standard Oil Co. (Indiana)

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Chicago	15.5	17.5	4 0	9.8
Decatur, Ill.	15.5	17 5	4.0	9.8
E. St. Louis	15.2	17.2	4.0	9.5
Joliet	15.5	17 5	4.0	9.8
Peoria	15.5	17.5	4 0	9.8
Quincy	15.2	17.2	4.0	9.6
Davenport, Ia.	15.5	17 5	4.0	9.8
Des Moines	15.2	17.2	4 0	9.6
Mason City	15.7	17.7	4.0	10.0
Sioux City	15.5	17.5	4.0	9 8
Duluth, Minn.	16.2	18.2	4 0	10.6
Mankato	15.9	17.9	4.0	10.2
Minneapolis	15 9	17.9	4.0	10.2
LaCrosse, Wis.	16 9	18.9	5.0	10.2
Green Bay	17.2	19.2	5.0	10.5
Milwaukee	16.8	18.8	5 0	10.1
Madison	16.9	18 9	5.0	10.2
Detroit, Mich.	16.7	18.7	4.0	9.3
Grand Rapids	16 6	18.6	4.0	10.5
Saginaw	16.8	18 8	4.0	9.3
Evansville, Ind.	17.2	19.2	5.0	10.3
Indianapolis	17.4	19.4	5.0	10.5
South Bend	17.6	19.6	5.0	12 0
Fargo, N. Dak.	16.9	18.9	4.0	11.2
Huron, S. Dak.	17.4	19.4	5.0	10.7
Sioux Falls	16.9	18.9	5.0	10.2
Kan. City, Mo.*	14.9	16.9	4.0	9 2
Springfield	14.6	16.6	4.0	8.9
St. Louis	15.2	17.2	3.5	9.5
St. Joseph*	14 9	16 9	4.0	9.2
Wichita, Kans.	14.4	13.9	4.0	6.3
Bartlesville, Ok.	16.3	18.3	5.0	8.8

*State tax 2 cents, 1-cent city tax and 1-cent federal tax.

Discounts to dealers: Undivided accounts, 1½ cents on premium and regular and 2½ cents on third grade off service station prices; divided accounts one-half cent less than undivided. Where prices are more than 1 cent below normal, the discounts are one-half cent less than above.

Stanolex Furnace Oil in Chicago

Effective May 28, 1935, f.o.b. Chicago tank wagon prices: Range oil, less than 100 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons and more, 7.3 cents. No. 1 (36-40 lt. stw. zero), less than 100 gallons, 8.8 cents; 100-149 gallons, 7.8 cents; 150 gallons or more, 7.3 cents; No. 2 (30-34, stw. zero), same prices and quantities as No. 1; No. 3 (23-26, zero), less than 150 gallons, 7.5 cents; 150 gallons or more, 6.5 cents. No. 4 (12-16 zero), less than 400 gallons, 7.5 cents; 400 gallons or more, 6.5 cents, viscosity of No. 4, 85 and 100° F.; No. 5, less than 400 gallons, 5¾ cents; 400 gallons or more 4¾ cents.

Southern District

STANDARD OIL CO. (EFFECTIVE)

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Atlanta, Ga.	19.0	21.0	7 0	12.0
Augusta	19.0	20.0	7.0	13 0
Macon	19.5	21.0	7 0	13.0
Savannah	18.5	20.5	7.0	14.0
Birm'ham, Ala.	21.0	23.0	8 0	12.0
Mobile	20.0	22.0	8.0	11 0
Montgomery	22.0	24.0	8.0	13.5
Jackson, Miss.	19.0	21.0	7.0	11.0
Vicksburg	18 5	20.0	7.0	12 0
Jack'ville, Fla.	18.5	20.5	8.0	11.5
Miami	18.5	20.5	8.0	13.5
Pensacola	20.0	22 0	8.0	11.5
Tampa	18 5	20.5	8.0	12.5
Lexington, Ky.	19.5	21.5	6.0	10.0
Covington	18.0	20.0	6.0	11.5
Louisville	18.5	20.5	6.0	10.0
Paducah	18.5	20 5	6.0	10.0

In addition to the state tax of 4 cents on gasoline, Montgomery has city and county tax of 2 cents on gasoline and one-half cent on kerosene. Kerosene prices in Georgia and Mississippi include 1 cent state tax; in Alabama, an inspection fee of one-half cent on kerosene and one-fortieth cent on gasoline; in Florida an inspection fee of one-eighth cent on kerosene and gasoline. To Pensacola, Mobile and Birmingham state taxes on gasoline add 1 cent city tax.

Rocky Mountain District

CONTINENTAL OIL CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Denver, Colo.	18.0	20.0	5.0	13.0
Pueblo	17.0	19.0	5.0	13.0
Grand Junction	20.5	22.5	5 0	15.0
Casper, Wyo.	18.5	20.5	5.0	11.5
Cheyenne	18.5	20.5	5.0	13.0
Butte, Mont.	21.0	23.0	5.0	17.5
Billings	20.5	22.5	6.0	16.5
Helena	21.5	23.5	6.0	17.5
Great Falls	20.5	22.5	6.0	17.5
Salt Lake, Utah	21.0	23.0	5.0	16.0
Boise, Idaho	22.5	24.5	6 0	18.0
Twin Falls	23.0	25.0	6.0	18.0
Albu'que, N. M.	20.0	22.0	*6.5	13.0

*One-half cent city tax.

Effective March 1, 1934, discount to dealers with or without contract throughout Continental territory: Undivided dealer discount off service station price, 4 cents; divided dealer accounts, 3½ cents.

Southwestern District

MAGNOLIA PETROLEUM CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Dallas, Tex.	15.0	17.0	5.0	8.0
Fort Worth	15.0	17.0	5.0	8.0
Houston	15.0	17.0	5.0	8.0
San Antonio	15.0	17.0	6.0	8.0
El Paso	17.0	19.0	5.0	10 0
Muskogee, Ok.	16.0	18.0	5.0	8.0
Okla. City	16.0	18.0	5.0	8.0
Tulsa	16.0	18 0	5.0	8.0
Ft. Smith, Ark.	14.5	18.0	5.0	8.5
Little Rock	17.0	20.5	7.5	9.5
Texarkana	15.5	17.5	5.0	8 0

Atlantic Coast District

STANDARD OIL CO. OF NEW JERSEY

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Atl'tic City, N.J.	14.0	17.5	4.0	9.0
Newark	13.2	16.8	4.0	7.5
Annapolis, Md.	14.8	18 3	5.0	10.0
Baltimore	14.3	17.8	5.0	8.5
Cumberland	15.8	19 3	5.0	12.7
Wash'g'n, D. C.	12.3	15.8	3.0	9.5
Danville, Va.	16 6	20.1	6.0	12.9
Norfolk	15.1	18.6	6.0	11.3
Petersburg	15.8	19.3	6.0	11.4
Richmond	15.8	19.3	6.0	11.7
Roanoke	16 8	20.3	6.0	12.9
Charles'n, W.Va.	15.0	18.5	5.0	12.6
Parkersburg	14.3	17 8	5.0	11.2
Wheeling	15.5	19.0	5.0	12.2
Charlotte, N. C.	17.5	20.5	7 0	13.5
Hickory	18.7	22.2	7.0	13.7
Mt. Airy	17.5	20.0	7.0	13.8
Raleigh	18.2	21.7	7 0	18.3
Salisbury	16.0	18.0	7.0	13.6
Charleston, S.C.	16.2	19.7	7.0	11.3
Columbia	18 0	21.5	7.0	13.2
Spartanburg	16.75	19.0	7.0	13.5

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at regular price less one-half cent. Discount for kerosene, 1 cent off tank wagon price for 25 gallons or more under contract (contract not necessary in Baltimore) except in New Jersey, where no discount is given.

Nebraska

STANDARD OIL CO. OF NEBRASKA

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Omaha	17.9	19.9	6.0	10.1
McCook	18.6	20.6	6 0	10.8
Norfolk	18.3	20.3	6.0	10.5
North Platte	18.7	20.7	6.0	10.9
Scottsbluff	19.4	21.4	6.0	11.6

Note: Discounts to dealers; where service station gasoline prices are (maximum overall, including rent) as follows: Reliance, 2½ cents; Standard Red Crown, 3½ cents; Red Crown Ethyl, 3½ cents.

Where service station gasoline prices are below normal, resellers' allowances are reduced one-half of the amount below normal, down to the following (minimum overall, including rent): Reliance, 2 cents; Standard Red Crown, 3 cents; Red Crown Ethyl, 3 cents. Discounts to consumers for tank wagon deliveries covered only by Standard Commercial Consumers Contract, effective January 1, 1935.

Central South District

STANDARD OIL CO. OF LOUISIANA

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
N. Orleans, La.	15.5	17.5	‡8.0	†13.5
Baton Rouge	16.5	20.0	†7.0	12.5
Alexandria	17.5	21.0	††8.0	10.5
Lafayette	18.0	21.5	‡*8.0	12.5
Lake Charles	18.0	21.5	††8.0	13.5
Shreveport	16.0	19.5	†7.0	9.0
Knoxville, Tenn.	19.0	21.5	8.0	14.0
Memphis	18.0	21.5	8 0	11.0
Chattanooga	18.25	20.5	8.0	11.5
Nashville	18.0	20.5	8.0	13.5
Bristol	17.85	20.6	8 0	14.5

*Includes city tax of 1 cent.

‡Includes 2-cent parish tax. †Includes 1-cent parish tax.

Effective October 23, tank wagon gasoline refers to dealer instead of retail prices.

Price basis to dealers: Undivided dealers at dealer price less one-half cent.

Louisiana kerosene prices include 1-cent state tax.

Pacific Coast Territory

STANDARD OIL CO. OF CALIFORNIA

	Gasoline: Tank wagon†	Posted retail	Incl'ds tax of	Kero. tank wagon
San Francisco	16.5	18.5	4 0	11.5
Los Angeles	12.5	14.5	4.0	10.5
Fresno, Calif.	17.0	19.0	4.0	12.0
Phoenix, Ariz.	20.0	22.0	6.0	‡18 0
Reno, Nev.	18.0	20.0	5.0	13.0
Portland, Ore.	19.0	21.0	6.0	13.5
Seattle, Wash.	19.0	21.0	6 0	13.5
Tacoma	19.0	21.0	6.0	13.5
Spokane	22.0	24.0	6.0	16.5

*Retail prices posted by Standard Stations, Inc., a subsidiary.

†Prices are at company's plant or depots, as company does not operate stations. A 4-cent per gallon discount is given dealers and customers taking tank wagon lots except in Phoenix where the discount is 1 cent.

‡Includes 5-cent state tax.

Pennsylvania, Delaware and Part of New England

ATLANTIC REFINING CO.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Phil'delphia, Pa.	15.0	17.0	4.0	9 0
Pittsburgh	16 0	18.0	4.0	10.0
Allentown	15.5	17.5	4.0	10.0
Erie	15.0	17.0	4 0	9.0
Scranton	16.0	18.0	4.0	10 0
Altoona	16.0	18.0	4.0	10.0
Dover, Del.	15.5	17.5	4 0	10.0
Wilmington	15.5	16.5	4.0	9.0
Springf'd, Mass.	13.2	16.7	4.0	7.5
Worcester	13.3	16.8	4.0	7.5
Hartford, Conn.	12 3	15.8	3.0	7 5
New Haven	12.2	15.7	3.0	7.5
Providence, R.I.	12.0	15.5	3.0	7.0

Note—Tank wagon prices are those applicable to consumers purchasing lots of 100 or more gallons in one delivery.

Canada*

Imperial 3-Star Gasoline

IMPERIAL OIL, LTD.

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Hamilton, Ont.	22.0	25.0	6.0	17 5
Toronto, Ont.	22.0	25 0	6.0	17.5
Brandon, Man.	30.3	33.3	7.0	21.8
Winnipeg, Man.	28.7	31.7	7.0	20.2
Regina, Sask.	30.0	33.0	7.0	21.5
Saskatoon, Sask	32.8	35 8	7.0	24.3
Edmonton, Alta.	32.2	35.2	7.0	23.7
Calgary, Alta.	29.5	32.5	7.0	21.0
Vancouver, B.C.	27.0	30.0	7.0	24 0
Montreal, Que.	24.0	27.0	6 0	17.0
St. John, N.B.	26.0	30.0	8.0	19.5
Halifax, N. S.	26.0	30.0	8.0	19 5

*Imperial gallon used in Canada.

Maritime provinces, all dealers 4 cents off service station price. All other provinces open dealers 3 cents per gallon off service station price, 1 cent additional to 100 per cent accounts.

Naphtha

STANDARD OIL CO. (INDIANA)

	Tank wagon*
Oleum spirits	15.7
V.M.&P. naphtha	16.0
Cleaners' naphtha	15.0
Stanisol	15.0

*Prices include 3-cent Illinois tax, but not 1-cent federal tax nor 2 per cent retail occupational tax.

Prices f.o.b. Chicago, March 12, 1935. Each of above prices subject to discount of 1 cent per gallon for 150-gallon lots if covered by contracts.

New York and New England

SOCONY-VACUUM CO., INC.

	Gasoline: Posted dealer	Service station	Incl'ds tax of	Kero. tank wagon
Albany, N. Y.	14.2	17.7	5.0	7.5
*Met. New York	14.55	18.3	5.0	7.25
*Br'kl'n, Queens	14.3	17.8	5.0	7.25
Buffalo	14.45	17.5	5.0	8.0
Rochester	15.0	18.5	5.0	8.5
Syracuse	14.5	18.0	5.0	8.5
Boston, Mass.	11.0	12.5	4.0	7.5
Portland, Me.	14.5	18.0	5.0	7.5
Manch't'r, N.H.	14.8	18.3	5.0	8.25
Burlington, Vt.	16.2	19.7	5.0	8.5

*Includes 2 per cent city sales tax.

Ohio

STANDARD OIL CO. OF OHIO

	Gasoline: Tank wagon	Service station	Incl'ds tax of	Kero. tank wagon
Ohio points	17.0	19.0	5.0	*12.5

*Includes state tax of 1 cent, effective July 22.

Retail Price Changes

Regular-Grade Gasoline and Kerosene

Standard Oil Co. of Indiana, June 21, reduced station gasoline .3 cent in Wichita.

Standard Oil Co. of Louisiana, June 8, reduced tank wagon gasoline .75 cent and station gasoline 1.5 cents in Chattanooga; June 18, reduced tank wagon gasoline .5 cent and station gasoline 1 cent further. June 11, reduced tank wagon gasoline .5 cent and station gasoline 1 cent in Nashville; June 15, reduced tank wagon gasoline .5 cent and station gasoline 1 cent further. June 11, reduced tank wagon gasoline .5 cent and station gasoline 1 cent in Knoxville; June 13, reduced tank wagon gasoline .25 cent and station gasoline .5 cent further; June 14, reduced tank wagon gasoline .25 cent and station gasoline .5 cent further. June 15, reduced tank wagon kerosene 3.5 cents in Shreveport.

Standard Oil Co. of New Jersey, June 18, reduced tank wagon gasoline .75 cent and station gasoline 1.5 cents in Mount Airy; reduced tank wagon gasoline 1.5 cents and station gasoline 2 cents in Salisbury; reduced tank wagon gasoline 1.65 cents and station gasoline 2.9 cents in Spartanburg.

Standard Oil Co. of California, June 21, advanced tank wagon gasoline 1 cent in Fresno.

Socony-Vacuum Oil Co., Inc., June 21, reduced tank wagon gasoline .25 cent and station gasoline .7 cent in Buffalo.

Oil Credit Executives Continue Code Practices

PITTSBURGH, Pa., June 24.—Credit executives of the oil industry at the annual convention of the National Association of Credit Men discussed the results of operations obtained under the practices recommended by the committee on credit practices of the Planning and Coordination Committee of the oil code. Figures presented representing the composite receivables and gross sales of a group of 17 major companies for 1933 and 1934 reveal the following:

Gross sales, 1933	$2,683,011,389
Total receivables, 1933	323,693,254
Turnover of receivables.	8 times annually
Gross sales, 1934	$3,196,967,767
Total receivables, 1934	316,060,940
Turnover of receivables.	10.1 times annually

These figures reveal an increase in dollar volume of business aggregating approximately $510,000,000, whereas the investment in receivables actually decreased over $17,000,000. The unanimous opinion of the credit executives representing companies from all parts of the country was that a concerted effort should be made to continue the work inaugurated by the committee on credit practices and which has been so fruitful of results.

Late Fields

OKLAHOMA

In the Britton Pool, the discovery well, Slick-Urschel's No. 1 Owens, in Section 19-13-3w, flowed 465 bbls. in 24 hours ending Sunday morning and was shut in. Mabee Consolidated Corp. made a location on the townsite, Block 14, George Addition, SW SE NE Section 20-13-3w. An important test on which no information was being given out is Sinclair Prairie Oil Co.'s No. 1 Corbett, NE NW NE Section 17-13-3w. It was believed to be below 6,460 feet on Tuesday.

GULF COAST

HOUSTON, Tex., June 25.—Texas Co.'s No. 2 Pierce Estate, Section 39, I.&G.N. Survey, central Wharton County, flowed 12 bbls. per hour through a one-quarter inch choke with tubing pressure 1,640 pounds and casing pressure 1,890 pounds. Production is from the Marginulina sand cored from 4,693-4,704 feet, total depth. Due to the high gas-oil ratio the screen and tubing is being pulled preparatory to deepening.

California Standard to Build Refinery

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around 32 degrees A.P.I. The sulphur content is high but with modern processing methods presents no special problems in refining.

There has been considerable speculation as to how this crude oil will be marketed when large quantities are available. The immediate markets are limited and are largely controlled by two or three strongly fortified companies. To reach European markets a long tanker movement is necessary with payments of Suez canal tolls. The Far East outlets appear more logical at this time.

Some of the crude, in fact, has been sold to Japanese refiners and additional supplies have been contracted. Those familiar with this situation point to an interesting competitive situation which has developed in that section of the world's petroleum markets. The bulk of the production, refining and marketing operations in the Far East are controlled by subsidiaries of Royal Dutch-Shell and Standard-Vacuum Oil Co. (Standard Oil Co. (New Jersey) and Socony-Vacuum Oil Co., Inc.). Other American and English companies have been minor factors.

The principal companies have been having considerable trouble in recent months due to the new regulations of Japan covering the importation of petroleum products into that country. The oil monopoly of Manchukuo has temporarily at least stopped the import operations of all foreign countries except Japan. It is reported the position of the Shell and Standard-Vacuum interests in negotiating for changes in the Japanese regulations has been weakened, due in part to the fact that Standard of California was in a position to furnish petroleum supplies both from its Bahrein Island concession and also its West Coast operations in the United States. California crude oil, including the high gravity crude of Kettleman Hills Field, was sold to Japanese refiners and large quantities of fuel oil have been sold to Japan. Other West Coast companies have participated in this business. Standard of California has other outlets for its products in the Far East.

It is this development that has led to the prediction that the Standard of California might enter the Far East markets on a wider scale with a refinery for its Bahrein crude supply. It has also been suggested it could enter into a permanent arrangement to furnish crude supplies for enlarged refinery operations in Japan. It is known representatives of Japanese owned companies with the support of their government have indicated their desire to contract for large supplies of crude oil and also fuel oil.

The California Standard has also been a factor in European markets through the sale of crude oil and refinery products from its California operations. There has been a demand for its light gravity Kettleman Hills crude at new refineries in France due in part to the fact that spot supplies of East Texas and other high gravity Mid-Continent crude oils at the Gulf Coast have been greatly reduced in the past year. It has been reported the company was financially interested in one of the French companies—Raffinerie du Nord—with a refinery at Dunkerque.

A subsidiary California Arabian Standard Oil Co. will shortly start drilling on a concession of 165,000 square miles which the company has in Saudi, Arabia. The structure to be drilled is similar to that from which the Bahrein Island production is obtained. The company is also carrying on test drilling and other exploratory work on its holdings on the Isthmus of Tehauntepec in western Mexico. Other nonproducing holdings of the company are in Columbia, Mexico and Venezuela. It has a 20 per cent interest in the Nederlands New Guinea Petroleum Co. This company, in which Standard Oil Co. (New Jersey) and Royal Dutch-Shell have 40 per cent each, owns a large concession in Netherland New Guinea on which exploratory work is being carried on.

Drastic Steps Are Needed to Prevent Breakdown On the Pacific Coast

By L. P. STOCKMAN

LOS ANGELES, Calif., June 24.—It is becoming more evident with each succeeding day that drastic steps will have to be undertaken in the immediate future if producers and refiners desire to avert a complete breakdown in Pacific Coast markets. The production situation has reached a critical point not only because of excessive overproduction but also because of the practice of several producers in selling crude oil substantially below posted prices. These two factors go hand in hand because, in most cases, it is the overproduced crude oil that is being sold below regular posted prices. State production of crude oil during the month of June will be greatly in excess of the producible allotment of 513,730 bbls. per day with every indication pointing to the possibility that it may exceed 535,000 bbls. per day.

The Central Proration Committee is in a quandary because it is powerless to do a thing, as there is no compulsory regulatory legislation on the statute books, and therefore any curtailment program undertaken must be voluntary. Approximately 95 per cent of all producers are conforming with the existing curtailment program and will continue to do so. These represent by far the most conservative and aggressive operators in the State, but it is the minority's excess production that establishes the going market, especially if dumped at distress prices. California producers and refiners are not going to throw up the sponge without a battle and accordingly tentative plans are already well under way to stabilize the situation. Marketers have been working on a program that will shortly be submitted to the Attorney General for approval and this will go a long way toward removing unfair competition. If this plan is approved, and it will be the best thing in the world for all concerned, producers, refiners and marketers will be able to get together and arrive at a fair decision. Up to the present, everybody is afraid of consulting his neighbor or competitor for fear that they might inadvertently violate the antitrust laws. Executives of major companies feel rather sanguine, however, as they are very anxious to stabilize prices and thus assist independent marketers as well as helping themselves. Inquiry has developed the fact that every major company in the State is willing to supply independent refiners with ample crude oil if they will conform with established prices and they have further agreed that they will buy all or any part of the fuel oil production resulting from normal operations. Independent refiners have been holding a series of meetings in an effort to arrive at a definite program that can be submitted to major companies and some headway has been made.

Disciplinary Action

It is getting to the point where many operators fear the futility of the situation and have openly stated that disciplinary action is urgently needed. Ralph Lloyd has recommended that major companies deliver an ultimatum to the effect that unless curtailment is made effective within 30 days they will severely reduce the posted price for crude oil. Mr. Lloyd has worked hard and diligently in his efforts to stabilize production and while he has accomplished a lot of good he can only go so far. Another equally well informed operator has strongly advocated that restrictions be lifted in the Playa Del Rey and Mountain View Fields and that operators be given the privilege of producing to their heart's content at substantially lower prices.

Forest Oil Corporation Buys Big Nowata Block

(Continued from Page 20)

& Dunn, with which the firm of Dunn & Lewis have had so much success in the Delaware district in the Nowata Field.

The Bartlesville sand is not as hard or as closely grained as the Bradford sand and the results may not be the same in the two fields, but the Bradford-Allegany operators have advanced so far in their methods and are adding to their knowledge of underground condition so steadily that experts believe the Nowata-Chelsea area will eventually show a large increase in oil output under the Bradford plan of operation, or one modified to meet conditions in the Bartlesville sand that are not met in the Bradford sand.

Robert Dott Is Appointed Head of Oklahoma Survey

Robert H. Dott, well-known Tulsa geologist, will assume the duties of director, Oklahoma Geological Survey on

ROBERT H. DOTT

July 1. Mr. Dott's appointment to this position assures the resumption of the duties of this department which has been inactive since 1931 when Dr. Charles N. Gould relinquished his office because of lack of appropriations.

ELLIS HAMILL DROWNED

HOUSTON, Tex., June 24.—Ellis Hamill, 30, independent operator with the firm of Hamill and Hamill of Houston, was drowned in Carnacahua Bay.

Pipe Line Construction

WYOMING-NEBRASKA CONTRACT

Contract has been let for taking up about 130 miles of miscellaneous size pipe scattered through Wyoming to be reconditioned and relaid in a gas line extending from Clayton, Wyo., to Bridgeport, Neb., for the North Central Gas Co. of Wyoming to serve several towns in eastern Wyoming and northwestern Nebraska. The new line will contain about 60 miles of 12-inch, 61 miles of 10-inch, 9 miles of 8-inch, 18 miles of 6-inch and 14 miles of 3-inch pipe. Couplings will be used and work is to start on July 5. Contract for taking up, reconditioning and relaying the material has been awarded to Williams Brothers, Tulsa.

EXTENSION TO DETROIT?

DETROIT, Mich., June 24.—Mayor Frank Couzens says he has asked Burt H. Bay, president of the Panhandle Eastern Pipe Line Co. of Kansas City, to send representatives here this week to discuss contracts to furnish the city with natural gas.

"Early action is essential to work out the basis of a solution in time for the necessary construction during the current season," the mayor told Mr. Bay.

Detroit officials previously had discussed construction of a pipe line from the Panhandle as a Texas federal project. The line was advocated by Governor James V. Allred of Texas, but a grant of authority was not passed by the state legislature.

KANSAS CITY, Mo., June 24.—Burt H. Bay, president of the Panhandle Eastern Pipe Line Co., said that W. C. Beckjord, New York agent of the firm, probably would go to Detroit to discuss natural gas contracts with Mayor Frank Couzens there. Mr. Bay said his company had surplus capacity to handle gas demands of the city.

The company's lines extend from the Texas Panhandle and Hugoton Fields to the Indiana-Illinois State line.

TO START CORTEZ LINE

HOUSTON, Tex., June 24.—Construction of Cortez Oil Corp.'s $500,000 welded oil line from the Sam Fordyce Field is expected to get under way within a few weeks. Contract has been let to the Hope Engineering & Supply Co. and surveying crews have surveyed approximately 15 miles of the right of way. The line is being laid from the field to the lower Rio Grande Valley's new deep-water ports at Brownsville and Port Isabel.

GOLDING-MURCHISON PLANS

FORT WORTH, Tex., June 24.—Rumors have been renewed in regard to Golding and Murchison (American Liberty Oil Co.) of Dallas contemplating construction of an 8-inch line from Rusk Station in Cherokee County, southern terminus of Liberty Pipe Line Co.'s line from the East Texas Field tying into the Pure-Van Pipe Line Co.'s line from the Van Field to Smith's Bluff, to the Conroe Field. Golding and Murchison have an 8-inch line from the Conroe Field to a Gulf Coast terminal and reports are the connecting link will give a direct outlet for the company's East Texas properties via Conroe. The company, however, states nothing definite will be known for at least 60 days. It holds an option on the Liberty Pipe Line Co. line.

Republic Oil Refining Co. and other independent operators in the East Texas Field are said to be included in the negotiations. The Republic company has a 5,000-bbl. refinery at Texas City, the southern terminus of the Conroe line.

MAGNETIC STORM

The Tucson, Ariz., observatory of the U. S. Coast and Geodetic Survey reports a severe magnetic storm commenced at 10 p.m. (C.S.T.) June 18 and ended 8 a.m. (C.S.T.) June 20. Telegrams follow: "Storm began eighteenth. Four. Severe." "Storm ended twentieth. Fourteen."

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BRANCH STORES: ACTIVE MID-CONTINENT AND GULF COAST FIELDS

Higher Recoveries in Flooding Possible by Water Conditioning

By ARTHUR SIMMONS
Torrey, Fralich & Simmons, Bradford, Pa.*

It is not within the intended scope of this paper to present detailed chemical characteristics of waters used in flooding, nor to present data regarding the rates of pipe corrosion for different waters, but to broadly discuss many of the problems involved and suggest partial solutions to some of these problems.

The writer has been privileged to study flood practices throughout the Bradford and Allegany Fields and in many cases the conclusions are that too little attention has been paid to the quality of flood water. Acute cases of water trouble are relatively few but innumerable examples exist, where in the writer's opinion, higher recoveries could have been obtained if some small amount of time and money had been expended along the lines of water conditioning.

To properly appreciate some of these problems it is necessary to briefly trace the history of flooding methods. There is no question but that the first floods were accidental, resulting from incompletely plugging abandoned wells which allowed the ground water access to the oil sand. Next, the practice was to pull or lift the casing, in which case the ground water was purposely introduced into the oil sand. A decided improvement in this method was the plan of introducing the ground water through a section of 2-inch tubing with packers set at the top of the oil sand and at the bottom of the ground water horizon. This method, commonly called subsurface flooding, was in vogue for many years and some few leases are still operated in this manner.

As it became generally realized that the supply was variable and added pressure was a desirable feature the practice changed to pressure flooding. With this method all water was brought to the surface, added pressure applied at pumping stations and the high pressure was then conveyed to the water intake wells and through high pressure tubing to the oil sand. Pressure flooding is now almost universally practiced and is considered the best and most practical method for water flood operations.

Following the commencement of pressure flooding there commenced a series of problems which probably existed previously, but inability to measure applied pressures and water input quantities resulted in a dearth of information and data and in those days little or no thought was given to water other than quantity.

In many localities the first pressure flood operations caused excessive plugging of the intake wells for the reason that all supply wells were air lift pumped and this aeration precipitated soluble iron. It appeared that the solution to this problem was to aerate the water thoroughly to precipitate all iron, and then filter out the precipitated iron with rapid sand pressure filters. By this procedure the most acute cases of well plugging were eliminated. A very undesirable phase of this practice was the resulting high oxygen content of the water which rapidly increased its corrosiveness. The problem of corrosion will be more fully described later in the paper.

*Presented at the fifth Pennsylvania Petroleum and Natural Gas Conference, Pennsylvania State College.

Required Water Quantities

The total water requirements of the Bradford Field have been discussed frequently but positive evidence is not available to definitely prove the amount of water used in the Bradford Field for flooding purposes. In an attempt to arrive at these figures data has been assembled to indicate the amount of water required to produce a barrel of oil. Few if any pressure flood developments have reached the abandonment stage and it has been necessary to estimate future oil productions and water input quantities.

WATER USED PER BARREL OF OIL PRODUCED

Property No.	Amount of water used to date	Estimated amount of water used at ultimate depletion
1	4.8	6.0
2	5.1	6.5
3	5.2	7.5
4	8.3	10.0
5	13.0	16.0

The above table may be misleading in view of the fact that it is based on an operation to probable abandonment. If the number of barrels of water used per barrel of oil produced was plotted against time there would result a high ratio in the early stages, a very low ratio during the period when the oil wells are producing at or near their peak, and a gradually increasing ratio as oil production is declining. It is not the purpose of this data to conclude any relative flood efficiency for it is believed that the varying water quantities represent only the physical characteristics of the sand, provided, of course, that an excessive amount of water is not being admitted to a "thief streak" or "gas sand."

Assuming that all floods in the Bradford Field are in such a stage that the water requirements are constant and using as an average 10 bbls. of water per barrel of oil produced, there are required about 370,000 bbls. of water per day. This is a tremendous quantity and can possibly be better appreciated by comparison with municipal requirements, for this amount of water would probably satisfy the needs of two cities, each of which could be as large as Harrisburg, Pa.

There are numerous instances in the Bradford Field which indicate a declining ground water level and it is the writer's opinion that in a relatively short time it will be necessary to obtain sources of water outside the Bradford Field. This belief is predicated on a gradual increase in total requirements and a diminishing supply within the field.

Quality of Flooding Water

The ideal of quality should be such that the incoming water does not plug the sand either at the face or in the sand body, for little or no oil can be driven out of a sand unless water is forced into the sand. Plugging can result from mechanical or chemical means and unquestionably some plugging always occurs.

In connection with the probability of sand plugging it should be emphasized that the pore openings are semi-microscopic in size. Hassler[1] has contrived to measure the size of pore openings in the Bradford sand, which are .05 millimeter (or .002 inch) and smaller. Daniell[2] states that all rock pores of this nature are capillary in size. Horner[3] has measured the minute pore in a moderately fine laboratory thermometer and finds that it possessed about twice the diameted of the largest Bradford sand openings. It would appear that the question of plugging is not merely academic but a practical problem intimately related to oil recoveries.

As has previously been stated, the quality requirements for flooding water are simple — that is, absolutely clean water entering the sand, and if the fineness of the sand pore openings could only be appreciated no common variety of clean water would be used.

In the normal course of events a completely filtered water usually corrodes the pipe lines to form enough rust and scale so that by the time the water reaches the sand the effect of filtration is partially nullified.

The writer has had an opportunity to examine water samples where the amount of suspended matter at the intake wells was in excess of that of raw water, but still this water did not appear muddy or excessively dirty. There can be but little question but pipe corrosion contributes a damaging amount of foreign material to the water.

A few years ago the growth of organic substances was not considered a highly important factor for regardless of the amount of this material which accumulated in the raw water tanks it was incorrectly assumed that additional growth in pipe lines would not take place because of the absence of light. Experience has demonstrated that organic growths are not to be considered lightly and the writer has observed that pipe line flushings carry large amounts of such material. If these growths can accumulate in buried surface lines they can also develop in water well tubing. For industrial purposes the accumulation of organic growths, such as occur in the Bradford Field, would not be a problem, for few if any cases are known where actual plugging of the pipes occurred.

Corrosion of Pipe Lines

Altogether too little is known about the relative rates of corrosion of pipe lines in the Bradford oil field. As might be expected, there are varying degrees of corrosion depending on time and the corrosive tendency of the water. The problem is further complicated by the fact that the most corrosive water in the field is such that pipe replacements are extremely frequent. There is but little doubt but that some poor engineering counsel has resulted from this fact for pipe engineers are inclined to minimize fears about corrosion. In most cases they willfully or unwittingly interpret corrosion in terms of pipe replacement, but in the writer's opinion the question of pipe replacement can be disregarded for, except for mechanical failure, little or no pipe will be replaced during the life of a flood.

There is little question but that products of corrosion contaminate the water and cause plugging of the sand pores.

The first attempts to reduce corrosion were the use of pipe coated with a bituminous paint, and the use of coated pipe has become general. No exact data could be found as to the effectiveness of these pipe coatings and, while there is a small amount of evidence to indicate that these coatings are not permanent, it is believed that the water well characteristics have been improved by the use of paint coated pipe.

Another method, now attaining prominence, in the control of corrosion is to chemically stabilize the water to effect a slight scaling tendency. The process of adding lime, to increase PH values, alkalinity, and scale forming hardness is not generally practiced in treatment of flood water and in cases it is looked upon with suspicion as a questionable experiment. It should be pointed out that lime additions have been practiced in municipal water systems for years with considerable success. It has been emphasized by Clarke[4] that indiscriminate and careless lime feeding may be harmful rather than beneficial and any such additions should be carefully controlled.

Ground waters of the Bradford area have been termed "corrosive" and "noncorrosive" but the terms are only relative. All Bradford waters are "noncorrosive" in comparison with some of the sulphurous waters in the Pennsylvania coal regions, and conversely all water is corrosive and will rust steel with varying degrees of severity. For flooding purposes there is needed a water much cleaner than any other industrial requirement, and it is highly important to reduce corrosion to a minimum. A possible solution to this problem is to use galvanized or similarly coated pipe but it appears that the costs of such materials are prohibitive.

Speller[5] has shown that the corrosiveness of some waters is almost directly proportional to the dissolved oxygen content, consequently the removal of all dissolved oxygen would appear desirable.

Water Treatment

Some operating companies are advocating no water treatment of any description on the basis of using deep well centrifugal pumps for the water supply well and continuous discharge of this pump into a centrifugal repressuring pump so arranged that the water does not come into contact with the atmosphere, and this plan is not without some merit. The principal disadvantage appears to be that little or no control can be exercised over the natural corrosiveness of the water, prolonged coagulation and settling becomes almost impossible, and the use of germicidal agents such as chlorine or copper sulphate are increasingly difficult.

The following arrangement of water treatment is proposed, which arrangement would undoubtedly satisfy the requirements of all Bradford waters, and it is believed that many cases exist where several of the steps could be eliminated as unnecessary.

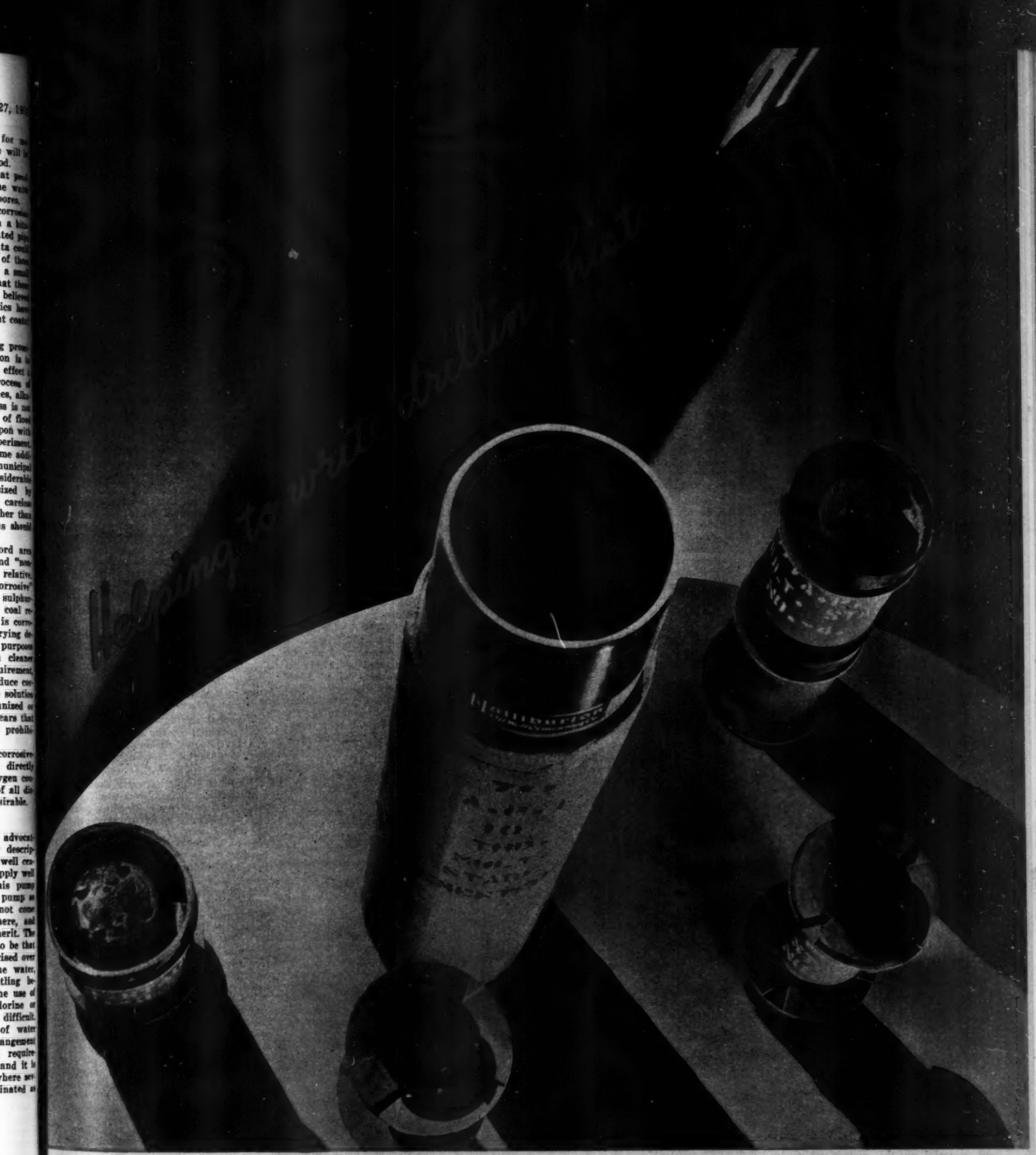
1. Complete aeration.
2. Chlorination
3. Stabilization.
4. Filtration.
5. Mechanical deaeration.
6. Chemical deactivation.
7. Secondary filtration.

The above mentioned operations for flood water treatment will be separately described and reasons for each will be outlined.

Aeration

A small amount of aeration is probably more injurious than complete aeration for the reason that soluble iron, if only partially removed, may have a tendency to precipitate in the pipe lines or the sand. If the oxygen is later controlled,

[1]Hassler, G. B., Private Communication.
[2]Daniell, A., "A Textbook on the Principle of Physics."
[3]Horner, W. L., Private Communication.
[4]Clarke, L. J., "Treatment of Flood Waters in the Bradford Field for Removal of Corrosive Suspended Matter." The Oil and Gas Journal, January 11, 1934.
[5]Speller, F. N., "Corrosion Causes and Prevention."



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or removed, it is better to completely aerate the water, thereby obtaining complete oxidation of the ferrous or soluble iron. Practically complete iron removal can be accomplished by aeration and filtration.

Chlorination

Some organic growths have been found in the Bradford Field which, according to Clarke[6], can only be eliminated with a heavy dosage of chlorine, whereas other algae or organic substances can be killed with a dilute solution of copper sulphate. The proper sterilizing agent can be determined from microscopic analysis of the water.

Stabilization

Water stabilization is an important phase of corrosion prevention and in this paper the writer has used the term in connection with chemical means of inhibiting corrosion. Chemical solutions can be used which minimize corrosion, chiefly for the reason that the added chemicals tend to form protective coatings on the pipe. The most common method of stabilizing water is to add either sodium silicate or lime. The sodium silicate is almost beyond consideration for it is relatively expensive and would possibly have unfavorable reactions with compounds in the sand. Another possibility to automatically add lime to the flood water is to allow the water to percolate through chambers filled with marble chips. An advantage of this method would be that the water would absorb all of the lime which it was capable of holding and it would be impossible to overdose the water. From an operating view there are many advantages to this plan but great precautions are necessary to prevent fouling of the marble chips, which would render them inactive. Also, considerable experimenting would be necessary to determine the required period of retention.

Filtration

The writer has observed numerous filters in the field which were not functioning properly and there are two principal reasons for this situation. First is improper backwashing and secondly, there are cases involving incomplete coagulation. The use of alum pots attached to the filter is not any protection from poor filter operation. In some cases the PH and alkalinity of the water are such that pre-treatment with alum followed by a settling tank would represent the proper operation. Other cases are known, where the precipitated iron is sufficient to preclude the need for other flocculating agents. Still in other cases the waters have such characteristics that only a heavy dosage of alum will form the floc and heavy alum dosages reduce the PH and alkalinity of the water, thereby increasing its corrosiveness. The writer has observed a widespread misconception in the function of flocculating agents for the prevailing opinion seems to be that a filter bed is nothing but a mechanical strainer. The finest filter sand is 10-20 times the size of Bradford sand grains and on this basis alone it is obvious that material can pass the filter which would be ideal for plugging the sand pores.

What actually occurs is that the first few inches of the filter bed provide all of the filtering effect and the flocculating agent causes a deposition of gelatinous material on the surface which increases the effective fineness of the sand. Another function of the coagulating agent is to gather the fine particles so the combined groups of particles cannot pass through the filter sand. However, as is the case with lime additions, indiscriminate feeding of alum is perhaps worse than the use of no alum.

It has been suggested to the writer by several water-works engineers that the commonly used pressure filter is not as efficaceous as an open type rapid sand gravity filter. No doubt this opinion is partially controlled by sanitary prejudice and regulations but there are many points in favor of using gravity filters. Principally, with the type of attention common in the oil field, the physical and chemical functioning of a filter is unappreciated. It is believed the use of open filters, where the collection of foreign material can be observed, would lend themselves better to the operating conditions which are necessary to the oil fields. The investment cost of open and closed filters is about comparable and the only disadvantage appears to be larger space requirements and pumping the filtered water from its collection basin. Cleaning would be facilitated and the operator would at all times be able to observe the condition of the filter bed.

[6]Clarke, L. J., Private Communication.

Mechanical Deaeration

As some waters are corrosive in direct proportion to the oxygen content, the writer offers as a suggestion the possible use of mechanical deaerators to remove the dissolved gases. Not enough information is available to the writer to make possible specific suggestions regarding deaeration, but it is a known fact that oxygen is "poison" to the pipe lines, that the presence of carbon dioxide usually increases the rate of pipe corrosion and if these gases are removed a water would be less corrosive.

In addition, there is positive evidence that the presence of oxygen has an undesirable chemical reaction with the oil and sand. Whether the presence of oxygen in flood water has a damaging effect on oil recoveries is not known but it is apparent that an oxygen free water is a more desirable flooding medium than a water containing a high oxygen content.

Chemical Deactivation

Another possibility in flood water treatment is to remove the last trace of oxygen in a chemical deactivator. This apparatus is in common usage in many industrial situations and the simplest form is entirely automatic in its operation. Briefly, the apparatus consists of a pressure tank filled with expanded metal and the corrosion which would normally take place in the pipe lines is confined to the deactivator. The expanded metal is replaced every few years but other than occasional replacement the operation is automatic and requires no attention. The chemical deactivation of flood water may not be required and is suggested as a possible solution to excessive corrosion troubles.

Secondary Filtration

Last and probably least important in the steps of water treatment which have been suggested is secondary filtration. If all of the possible steps in water treatment are ever adopted it is possible that the use of an enclosed filter would be justified as the final stage of purification. It is, of course, only a speculative possibility for until data are available from some of the additional methods the required use of a secondary filter cannot be predicted.

Summary of Water Treatment

The possibilities for water treatment have been outlined and the effectiveness of one or more methods cannot be predicted without an intimate knowledge of specific water characteristics. In this connection there exists too little data regarding the seasonal changes in waters. The belief exists that seasonal variations are much more important than are commonly credited.

Water Well Characteristics

There is an amazing conflict of opinion as to the normal characteristics of water well intakes, and in an attempt to determine the expected performance of water intake wells a large amount of data has been segregated and analyzed. Without a knowledge of the conditions the accompanying graphs provide perhaps more misinformation than information. The factors affecting water intake quantities can be enumerated as follows:

1. Sand thickness.
2. Sand permeability and uniformity.
3. Applied pressure.
4. Water quality.
5. Chemical characteristics of salts in the sand.
6. Pumping cycle of oil wells.

It was believed that input quantities reduced to a percentage decline would be informative and the accompanying curves are arranged on this basis with individual conditions separately described.

Graph 1, Figure 1—This curve represents the average daily input of 30 water wells over a period of five years and 100 per cent represents an average input of 44 bbls. per day. The maximum input was reached about four months after the first water was admitted and for the first year the pressure was held constant at 300 pounds pump pressure. During the second year pump pressures were increased to 800 pounds and for the third, fourth and fifth years pump pressures have fluctuated between 800 and 900 pounds.

Graph 2, Figure 1—Curve No. 2 is interesting from the viewpoint of water input decline with constant pressure. The slow decline probably indicates gradual sand plugging. Data from 10 wells are included and the 100 per cent on the curve is an average daily input of 25.7 bbls. The first points on the curve represent the second year's water input.

Graph 3, Figure 1—This curve represents the average of 27 wells and 100 per cent is equal to 68 bbls. of water per day, which was reached on the third month after the first water had been introduced. The increased water intake during the second year was due to a gradually increasing pressure.

Graph 4, Figure 2—The decline in water intake as indicated by this curve is perhaps the most interesting of any for the first water introduced is included in the plotted 100 per cent value. Added pump pressure was applied from the first and was constant for the first three years with an increase of 100 pounds for the last two years. The 100 per cent intake value represents an average volume of 37 bbls. per day.

Graph 5, Figure 3—The first six months' water intake values are not plotted on this graph as the first records were not sufficiently well segregated to allow for a rate of input calculation. Pressures have been raised and lowered but were constant for the last two years. The increased input during the second year was due largely to pressure increases.

Graph 6, Figure 3—On this group of 25 wells there have been used a widely fluctuating pressure and the first six months' input is not depicted by the curve. There has unquestionably been some plugging action which has been obscured by pressure increases.

Graph 7, Figure 3—This property has an unusually smooth decline trend and represents the average of 25 wells. The first three months are not shown on the graph for the reason that monthly data were not available.

Graph 8, Figure 3—An extremely rapid decline occurred on this property which would probably have been more accentuated if the first seven months water input had been recorded.

Graph 9, Figure 3—This curve represents only one well and is a perfect example of sand plugging. Twelve wells were involved in this particular situation but precise meter readings for a continued period of time were available for only this well, but from a knowledge of the original input quantities and the rate of decline it is believed that this well was a fair sample of the 12. The plugging of these wells took place before the installation of filters and subsequent operations with filtered water showed only the usual decline rate.

Graph 10, Figure 4—Curve No. 10 is something of a statistical oddity and is included to show the effect of pressure on average water intake quantities. The water was shut off during proration and the intakes were restored to nearly their previous quantities by increasing pump pressures.

Graph 11, Figure 4—This curve represents a group of 15 wells and indicates conclusively how water wells can be influenced with pressure.

Graph 12, Figure 4—Curve No. 12 is not based on actual meter readings for the reason that only intermittent readings were taken but about 20 wells on this property declined from an initial input of 30 bbls. per day to a settled quantity of 5 to 6 bbls. per day. No filters were used and a perfect example of plugging was the result. Various attempts were made to clean these wells without success and as a result the oil recovery was about 2,500 bbls. per acre below expectations. It is interesting to note that this decline occurred regardless of increased pump pressures which eventually reached 1,200 pounds pressure.

Conclusions

The water well intake curves are overbalanced in that they present a preponderance of good and fairly good situations. Many cases familiar to the writer are in existence where partial sand plugging has occurred but unfortunately the worst situations are not presentable in statistical terms for the reason that records are not available.

Some of the data presented by the curves indicate that the input quantities can be arbitrarily controlled with pressure and there is little doubt that the evidence of partial plugging has in many cases been obliterated by increasing water pump pressures.

Plugging Desirable?

Many instances have come under observation where the belief is expressed that water troubles do not occur but meter troubles are frequent, costly and annoying. It is not, of course, an absolutely parallel case but in the writer's opinion the effect of poor water is reflected in meter plugging for the openings in a meter strainer are from 30 to 50 times as large as the sand openings.

Frequent testing of water would indicate conclusively the reactions involved and much could undoubtedly be learned from a series of tests on the water produced in an oil well.

To most people a water as clean as a municipal supply system would be perfectly satisfactory for flooding purposes and undoubtedly many instances of such use would occur if the water was available at a low cost. For the purpose of forcing water through an oil sand as fine as Bradford sand most municipal water is much too dirty. Lewis[7] states that when using unfiltered tap water for permeability tests, the permeability value of the sample will be reduced to one-third of its true value under a sustained flow of a few hours. It has previously been mentioned but should be emphasized again that the Bradford sand requires a water cleanliness standard far in excess of any usual water usages.

We have observed instances of 90 per cent sand plugging and it is believed that the best operations are getting a 10 to 20 per cent plugging and that the majority of operations are in between these limits. Future studies and knowledge of water preparation will undoubtedly result in increased oil recoveries and the relatively low cost of water treatment will become insignificant in comparison to the higher yields of oil.

[7]Lewis, J. H., Private Communication.

Engineers' Club Chooses Officers for Coming Year

Glenver McConnell, Shell Petroleum Corp., was elected president of the Engineers' Club of Tulsa for the ensuing year at a recent meeting of that organization. The new vice presidents are: Executive, J. A. Whitlow, Public Service Co.; formal programs, J. M. McGregor, McGregor Engineering Co.; public relations, M. C. Shibley, city of Tulsa; entertainment, J. F. Eaton, Jarecki Manufacturing Co.; membership, H. P. Creel, the Texas Co. T. D. Williamson, consulting electrical engineer, was chosen treasurer. C. S. Simon, Midwest Piping & Supply Co., and L. A. Ogden, Pure Oil Co., were made directors.

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Economics of Gasoline Volatility From the Refinery Viewpoint

By HUGH W. FIELD and MERRILL J. FOWLE
Atlantic Refining Co.*

Six or eight years ago the gasoline furnished to the motorist by practically all refiners had substantially the same volatility characteristics. Since that time, however, due to a variety of causes, there has been a definite trend toward the marketing of more volatile motor fuels. As a result, at the present time, there is little standardization of gasoline volatility except as regards the vapor pressure limit imposed by the vapor locking tendency of the fuel in the consumer's automobile.

This situation merits considerable analysis, particularly from the standpoint of the ultimate cost of operating a motor car using the more volatile fuels. It is the purpose of this paper to discuss the refinery economic picture of gasoline volatility since the cost to the automobile owner must ultimately be affected by the refiner's cost.

Trend in Volatility

A brief discussion of the trend toward more volatile gasoline in recent years is presented to give a clarified view of the situation as it exists at the present.

In Table No. 1, significant A.S.T.M. distillation points for four different ranges of gasoline of the summer type are given. These gasolines are arranged chronologically and grouped into the approximate period of their availability to the motorist. The trend is obvious and well defined.

TABLE 1—VOLATILITIES OF TYPICAL GASOLINES ARRANGED CHRONOLOGICALLY

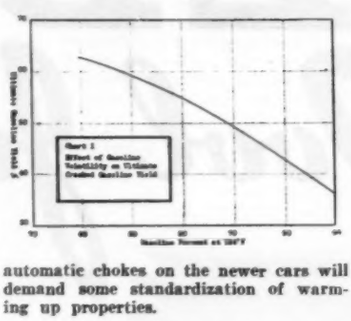
A.S.T.M. distillation per cent distilled at	Approx. period 1925 to 1929	1929 to 1933	1933 to 1934	Aviation types 1935
140° F.	2-5	7-10	11-13	12-16
212° F.	17-20	28-31	33-37	46-51
284° F.	50-53	52-56	61-66	76-92
374° F.	83-88	83-88	90-94	.....
392° F.	90-93	90-93	95-97	.....
E.P., °F.	430-440	430-440	390-400	350-390

For the purpose of this discussion the 140° F. point is taken as significant from the engine starting angle, the 212° F. point as a criterion of warming up performance, and the 284° F. point as important from the acceleration standpoint. Examining this table from the performance viewpoint, the refiner has gradually and steadily improved his product in all three of these respects. The warming up characteristic has received the greatest attention in order to obtain decreased use of the choke.

Until the development of the very volatile gasolines no attempt has been made to remove the heavier components from the gasoline. It is not necessary to omit this fraction from gasoline since these components cause no difficulty in operation with modern crankcase ventilation. The data presented in this paper will indicate that it is not only unnecessary to remove the heavy components but also undesirable, particularly from the economic standpoint.

The 1935 picture is quite different. Very wide ranges for both 212° F. and 284° F. points exist in the fuels available to the consumer. The 140° F. point has not shifted materially, due to the vapor pressure specification, but the remainder of the gasoline has been made much lighter and carried to considerable extremes in certain cases.

The warming up and acceleration characteristics of these gasolines, while improved, are not at all standardized. The lack of standardization in acceleration potentialities of gasoline is probably not serious, but the increased use of



automatic chokes on the newer cars will demand some standardization of warming up properties.

Production of Volatility

In increasing the volatility of gasoline, two factors must be considered from the production standpoint: (1) The type of gasoline produced and (2) the method of production.

There are two general types of gasoline, "cracked" and straightrun or "natural."

In this paper, "natural" gasoline will be considered as coming from three sources. The products from these three sources generally carry the names casinghead, compression gasoline, and crude naphtha. Casinghead, a light natural gasoline, is the material recovered from oil well gas at the crude source. Compression gasoline, very similar in characteristics to casinghead is obtained by compression of the gas evolved from the crude when distilled at the refinery. Crude naphtha is the gasoline distilled from the crude in the primary refinery distillation. For the purposes of simplification in the subsequent discussion compression gasoline will be considered under the category of crude naphtha.

Excess stocks of casinghead gasoline are in existence at present. From this it would seem at first glance that a shift to the lighter type of gasoline would be a healthy and economical move which would assist in working off the excess of this material. In fact, the lighter gasolines are now using casinghead. The amount of casinghead available is limited. That is to say, that for each barrel of crude produced there is a maximum quantity of casinghead which can be recovered from the gas produced along with that barrel of crude.

Our discussion then should not confine itself to the present situation which represents an unbalanced condition with regard to casinghead and crude, but should take in the broader aspects of the picture which would present themselves in the event of a general shift to very light gasoline. Under these conditions the refiner would be forced to look in another direction for the light components of his gasoline.

In Table No. 2 are figures for an assumed typical crude from which finished straightrun gasoline of the 1934 type and the 1935 extremely light type are produced. This production covers the casinghead available from the crude source, as well as the crude naphtha and compression gasoline obtained in the primary refinery distillation.

TABLE 2—YIELDS ON PRIMARY DISTILLATION OF CRUDE

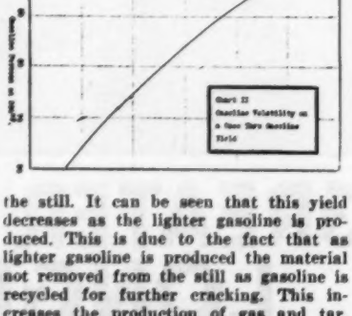
Type of gasoline	1934 Typical	1935 Light
Crude charge, gallons	100	100
Crude naphtha, gallons	35	20
Other products, gallons	65	80
Casinghead available, gallons	5	5
Total gasoline, gallons	40	25

The production of lighter gasoline has caused a diversion of crude to products other than crude naphtha of 15 per cent of the crude charge. At the present time this diversion to the other products might well be considered as cracking stock. The economics of this picture will be taken up subsequently.

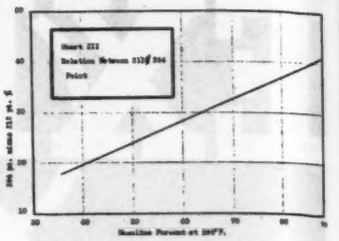
The percentage of cracked gasoline in the total has steadily increased until it is now well up to the 50 per cent mark. This type of gasoline therefore deserves careful consideration in our discussion. Further, if a decreased yield of crude naphtha is taken from the crude, as shown above, an increased load will be thrown on cracking to produce the light components necessary for light gasoline production.

A set of curves is presented representing average cracking still operation on typical charge, illustrating the effect on the production and yield when changing the volatility of the gasoline. In all these curves the common argument has been chosen as the A.S.T.M. per cent at 284° F. It should be mentioned that while these curves are for a given single charge to the still other types of charge, while not giving the same absolute values, will exhibit the same relationship.

Chart 1, plots the ultimate gasoline yield obtained from the fresh charge to



the still. It can be seen that this yield decreases as the lighter gasoline is produced. This is due to the fact that as lighter gasoline is produced the material not removed from the still as gasoline is recycled for further cracking. This increases the production of gas and tar. Chart 2, plots once through yields of gasoline. This yield is the percentage of the recirculating oil passing through the cracking coil which is cracked to gasoline. For a given still this recirculation is a constant quantity per day. Thus the once through yield as plotted represents relative gasoline production per still operating day. This curve falls sharply as



the lighter gasolines are made. This is due to the fact that the material not removed as gasoline must be returned for further cracking. This oil is more difficult to crack than the fresh charge, resulting in a lower rate of cracking.

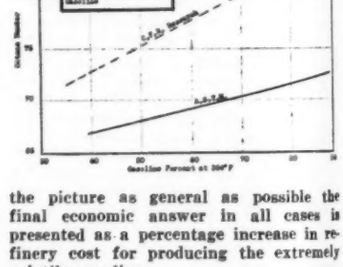
Chart No. 3 presents the relationship which is obtained on the cracked gasoline between the 212° F. and 284° F. points. This permits correlating these data with the previously discussed volatility trend.

Chart No. 4 shows that as the cracked gasolines are made more volatile a gain in detonation value is obtained. The gain is not very marked over the ranges under discussion.

The individual refinery situation determines whether the major portion of the burden of producing the more volatile gasolines would be taken by the crude stills or by the cracking stills. The average refinery would take the load on the cracking stills.

Cost of Volatility

We can calculate the cost of producing more volatile gasolines, from the data just presented. The figures will be strictly relative due to the fact that different refinery situations create a difference in basic costs. Therefore, in order to make



the picture as general as possible the final economic answer in all cases is presented as a percentage increase in refinery cost for producing the extremely volatile gasolines.

TABLE 3—ECONOMICS OF "NATURAL" GASOLINE PRODUCTION

Type of gasoline	1934 Typical	1935 Light
One pipestill:		
Charge, 50-gal. bbls.	12,000	12,000
Gasoline, 50-gal. bbls.	4,200	2,400
Fuel and cracking stock	7,800	9,600
Debits, per day:		
Charge at $2.00/50-gal. bbl.	$24,000	$24,000
Casinghead at $3.50/50-gal. bbl.	2,100	2,100
Manufacturing cost	500	500
Total debits/day	$26,600	$26,600
Credits, per day:		
Fuels and cracking stock at $1.50/50-gal. bbl.	$10,700	$14,400
Gasoline cost $/day	$15,900	$12,200
$/bbl.	$3.31	$4.06
c/gal.	6.62c	8.12c
Per cent increased cost	0%	23%

Table No. 3 presents the operation of the primary refinery distillation running to produce gasoline, which when blended with the casinghead available, would meet the volatility specifications for the 1934 typical and the 1935 light gasoline. Here the point might be raised that with present excesses of casinghead gasoline a much higher percentage of this material can be used for producing the light type of gasoline. As previously pointed out, in this discussion, where the possibility of a general shift to light gasoline is being considered a balanced casinghead-crude picture is assumed.

In this calculation it will be noted that the cost per gallon increases 1½ cents, or a 23 per cent increase in the

(Continued on Page 51)

*Presented before S.A.E., White Sulphur Springs, W. Va., June 16-21.

Fundamental Research on Chemical Constitution of Lubricating Oils

By FREDERICK ROSSINI*

The early investigators who attempted to solve the very complex problem of the nature of the chemical constituents of the heavy fractions of petroleum were handicapped not only by the lack of modern apparatus and methods for chemical and physical analysis, but also by a lack of proper combination of the processes of fractionation. Their investigations consisted principally in determining the physical and chemical characteristics of more or less closely fractionated cuts of the lubricating oil stock. Because it appeared futile to attempt the separation of the oil into its actual chemical constituents, most of this work was concerned with the problem of obtaining, for these prepared fractions of lubricating oil, correlations between the physical and chemical properties on the one hand and the average chemical constitution on the other.

It seems appropriate to summarize here briefly the nature and extent of some of the available information on the chemical constitution of lubricating oil.[1, 2, 3]

Pioneer studies on the elementary composition of the lubricating oil fraction of petroleum were made by Mabery,[4] who found that the high-boiling fractions of Pennsylvania, Canada and California oils had empirical formulas ranging from C_nH_{2n} to about C_nH_{2n-6}, the proportion of hydrogen decreasing with rise in boiling point. More recently, Mabery[5] attempted the fractionation, by extraction with hot mixtures of ether and alcohol, of the hydrocarbons in various crude oil residua not volatile at 300° C. and a pressure of 30 mm. mercury. In this work Mabery obtained some fractions very low in hydrogen, having empirical formulas of about C_nH_{2n-20}. He reported molecular weights as high as 1,700.

West Virginia Crude

An extensive study of the lubricant fractions of a West Virginia petroleum was made by Smith,[6] who subjected the topped, dewaxed and steam-distilled crude oil to successive extractions with acetone, and determined the physical properties of the fractions obtained. Smith found that the hydrocarbons poorer in hydrogen were more soluble, as were the hydrocarbons of lower molecular weight. The molecular weights varied from about 300 to 900, and the empirical formulas from C_nH_{2n-2} to C_nH_{2n-8}. From his many data Smith concluded that a "study of the fractions . . . does not disclose more than a suggestion as to the identity of the compounds of which these oils are composed," and that "consistency in the values of certain physical properties should assuredly not be construed as indicating that individual compounds have been separated." The work of this investigator emphasizes the complexity of the task confronting those who would separate the lubricating oil fraction into its constituent hydrocarbons.

Kyropoulos[7] correlated the data on refractive indices with the molecular weights of hydrocarbons of different types: normal and isoparaffins, naphthenes, and aromatic hydrocarbons. A separate curve of refractive index against molecular weight was obtained for each type, so that a determination of these two properties for any given fraction of lubricating oil permitted classification of it with respect to average constitution. Examination of the data for certain Pennsylvania and other saturated hydrocarbon oils led this investigator to believe that these oils are composed largely of isoparaffins.

In order to have a method for easily classifying oils with respect to type, ranging from Pennsylvania oils on the one hand to Gulf Coast oils on the other, Hill and Coates[8] investigated the relation between the viscosity and density of various oils. They were able to compute, from the values for viscosity and specific gravity of a given oil, a quantity called the "viscosity-gravity constant," whose value did not vary appreciably for oils of the same type, but did vary considerably for oils of different types. The value of the viscosity-gravity constant varies from about 0.80 for oils of the Pennsylvania type to about 0.90 for oils of the Gulf Coast type, and is extremely useful in spotting fractionation with respect to type of components.

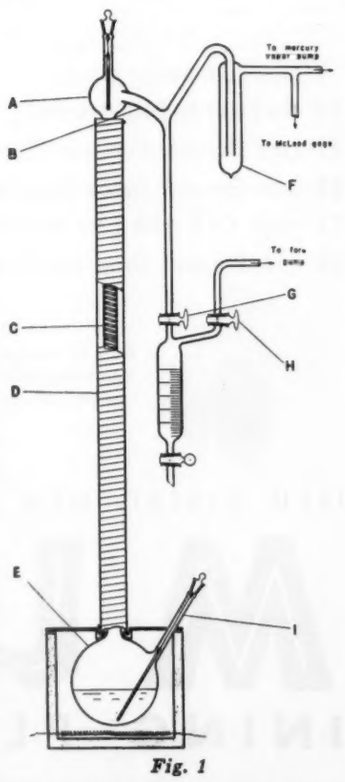


Fig. 1

Fractionating column for distilling lubricating oil in vacuum. A, bulb condenser; B, conduit to receiver and high-vacuum system; C, fractionating column with copper spiral; D, electrically-heated jacket; E, still pot; F, liquid-air trap; G, H, stopcocks permitting withdrawal of sample without breaking vacuum in still; I, tube for introducing charge

In a somewhat similar endeavor, Dean and Davis[9] correlated the properties of viscosity and change of viscosity with temperature for various oils. They computed a quantity, called the "viscosity index," whose value was almost the same for oils of the same type (or for fractions of the same oil separated only by distillation) but varied considerably for oils of different types. The value of the viscosity index was set at about 100 for oils of the Pennsylvania type, and about 0 for unprocessed oils of the Gulf Coast type.

Relationship Established

Utilizing the available data on the densities of pure hydrocarbons (of lower molecular weight than those to be expected in the lubricating oil fraction of petroleum) Davis and McAllister[10] obtained smooth relationships between molecular volume and molecular weight for each type or series of hydrocarbons, and between molecular volumes and the number of naphthene rings in the molecule. They deduced an equation which permitted calculation, for any aromatic-free oil, of the percentage of the total number of the carbon atoms that are in naphthene rings—given the molecular weight and specific gravity—and checked this on various fractions of lubricating oil by determination also of the average molecular formula. These investigators found, as has Fenske,[11] that the viscosity index of aromatic-free oils decreases, in general, will decrease in the value of x in the average molecular formula C_nH_{2n-x}.

McCluer and Fenske[12] desired to obtain an index involving viscosity and specific gravity, which would yield values numerically equal to the viscosity index. Accordingly, they devised the "gravity index," obtained from the relation between the viscosity-gravity constant and the viscosity index, and showed that for various mineral lubricating oils their gravity indices had values practically equal to the viscosity indices. But they found also that this identity between gravity index and viscosity index no longer existed in the case of synthetic lubricating oils made by polymerization of olefin hydrocarbons. This circumstance points to some constitutional difference between these synthetic oils and the natural ones.

In a similar manner, other indices, such as the "boiling-point index" and the "optical index," have been devised in order to correlate the properties of oils with respect to their constitutional types.[13]

When a crude oil is fractionated with respect to size of molecules, as by distillation, the values of the various indices of viscosity, gravity, etc., are practically the same for all fractions; but, when the fractionation is made with respect to type, appreciable differences in the values of the indices will appear. One of the important uses of such indices, or other similar correlations, then lies in their indication, especially in combination with one another, of a fractionation by type of molecule.

There have appeared in the literature in the past several years accounts of the synthesis and properties of some hydrocarbons of the sizes and types that may be expected to be in the lubricating oil fraction of petroleum.[14, 15, 16] Table 1 lists a number of these hydrocarbons with their properties.* It is extremely interesting to note how the temperature coefficient of viscosity and the density, calculated in the form of the viscosity index and the viscosity-gravity constant or the gravity index, change with the structure of the molecule. One of the striking conclusions is that these relations are qualitatively in good agreement

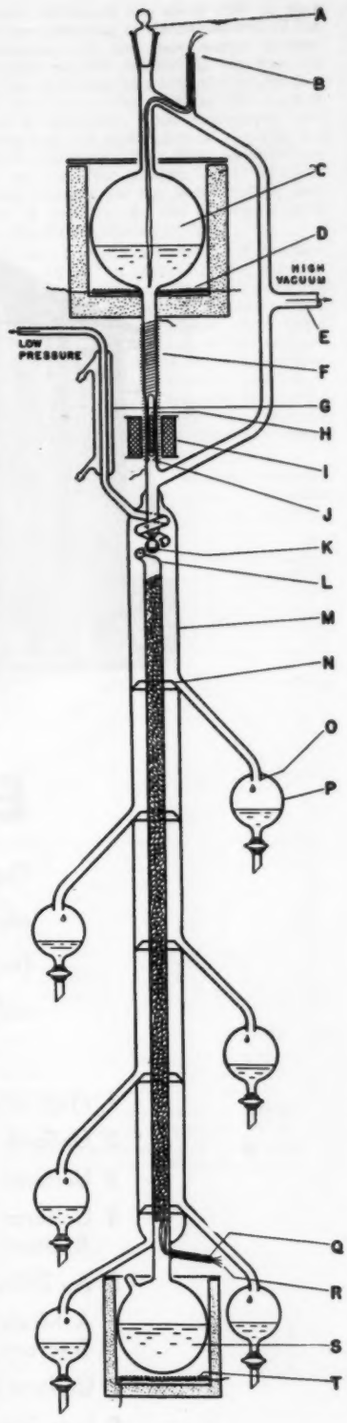


Fig. 2

Column molecular still. A, ground-glass stopper; B, deKhotinsky cement seal; C, de-gassing flask; D, heating element; E, connection to the high-vacuum system; F, heating element; G, condenser; H, glass-enclosed iron plunger; I, solenoid; J, ground-glass seat; K, glass ball; L, heater tube; M, condensing surface; N, annular gutter; O, dripper; P, receiver; Q, litharge-glycerin seal; R, thermo-element leads; S, kerosene boiler flask; T, heating element

*National Bureau of Standards (director, Institute Research Project 6), Washington, D. C.

Publication approved by the Director of the National Bureau of Standards, U. S. Department of Commerce.

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Presented at the A.P.I. Mid-Year Meeting, Tulsa, as a part of A.P.I. Research Project 6.

*These data were assembled by B. J. Mair.

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with the preconceived ideas developed from the study of lubricating oil fractions.

For the hydrocarbons in Table 1 the viscosity index is highest for the isoparaffin, being about 150; decreases to about 100 as two cyclohexyl groups are made part of the molecule, producing a two-ring naphthene; remains almost unchanged as these saturated rings are dehydrogenated to form two phenyl groups, producing a two-ring aromatic hydrocarbon; and then decreases very sharply to low values with increasing condensation of the molecule in the form of aromatic

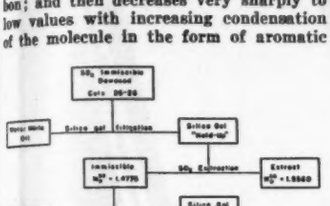


Fig. 3

Interlocking scheme of separation by extraction and adsorption

rings joined through two carbon atoms, as in the naphthalene and anthracene nuclei. For these hydrocarbons, with about the same number of carbon atoms in the molecule, there seems to be, in general, an increase in the values of both density and refractive index as the value of the viscosity index decreases. There is qualitative agreement between these data and the relation found by Davis and McAllister,[10] and confirmed by Fenske,[11] that the viscosity index of aromatic-free oils decreases, in general, with decrease in the value of x in the molecular formula C_nH_{2n-x}. A somewhat unexpected circumstance shown by Table 1 is the relatively small change in viscosity index produced by replacing, in a given molecule, two single naphthene rings by two singe aromatic rings (compare the second and fourth and the third and fifth compounds).

It would seem very desirable for the petroleum industry to encourage investigators in university and other scientific research laboratories to synthesize pure hydrocarbons of high molecular weight and to determine the physical constants of these substances. Such data, now extremely rare, will be of incalculable aid in identifying the pure hydrocarbons which it is hoped will be isolated from the lubricating oil fraction of petroleum.

Physico-Chemical Methods of Fractionation

The work Institute Research Project 6 on the resolution of the naphtha fraction of petroleum into its major hydrocarbon constituents has demonstrated the practicability and usefulness of four physico chemical fractionating tools; distillation, crystallization, extraction, and adsorption. It has been found that the most effective system of separation consists in the proper interlocking of these methods and the appropriate variation and combination of them to suit the particular fraction under investigation.

In the investigation of the lubricating oil fraction these same methods of fractionation are being used with gratifying success—although they are, of course, carried out under conditions widely different from those employed in fractionating the naphtha fraction because of the greatly different size and increased complexity of the molecules. The hydrocarbons in the

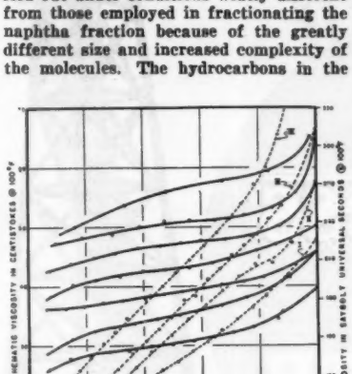


Fig. 4

Chart showing the result of four stages of systematic distillation of the lower-boiling "water-white" oil

lubricating oil fraction contain, on the average, about four or five times as many atoms per molecule as those in the gasoline fraction; and the number of possible isomers of triacontane, $C_{30}H_{62}$, is about 4,000,000,000, which is to be compared with 18 possible isomers of octane, C_8H_{18}.

As has already been pointed out, the petroleum industry has been using these same processes of distillation, crystallisation, extraction, and adsorption—in some form or another—for many years; and practically all the lubricating oil that is produced today is derived by a combination of at least three of these four methods of fractionation. The novelty that has been introduced into these fundamental principles and methods of fractionation by the work of Institute Research Project 6, and others whose aim is the separation of petroleum into its constituents, has

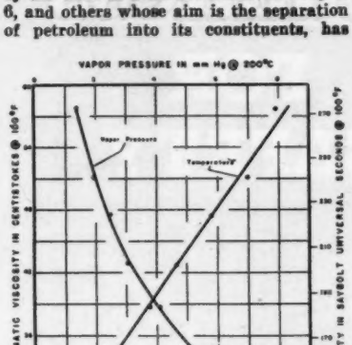


Fig. 5

Viscosity-boiling point relation at a given pressure for the middle cut of each of the seven charges of the fourth stage of the distillation of the lower-boiling "water-white" oil

been to refine, adapt and vary them to solve particular problems more effectively.

The following is a brief description of these fractionating methods as applied to the lubricating oil fraction of petroleum by Institute Research Project 6.

Distillation

Fractional distillation appears to be the most useful and practical means for separating any complex mixture of hydrocarbons according to size of molecule, because there is a general rise in boiling point at a given pressure (or decrease in vapor pressure at a given temperature) of hydrocarbons as the size or molecular weight increases. There seems to be no limit to the refinements and efficiencies that are possible with distillation processes as long as there exist any practical differences in the volatility of the various components. It is well known that prolonged heating of oils above 300° C. may produce cracking or decomposition of the molecules, and for that reason a temperature of 250° to 260° C. has been set as the maximum to which the lubricating oil fractions in the work of this project may be subjected. This necessitates carrying out the distillation at greatly reduced pressures. Two types of stills are in use on this project: (a) fractionating columns for the lower boiling portion of the oil; and (b) molecular stills for the higher boiling portion.

Figure 1 shows a sketch of a fractionating column,[9] of standard type, used for the lighter portion of the lubricating oil. The only packing in it is a spiral of No. 8 (B. & S. gauge) copper wire fitted closely to the inner wall of the column. The temperature in the pot is kept below 260° C.; the temperature of the oil in the head of the distilling column ranges from about 160° to 190° C.; and the external pressure is maintained at about 10^{-4} mm. mercury.

Figure 2 shows a column molecular still[9] used for the heavier oil fractions. The pressure external to the distilling

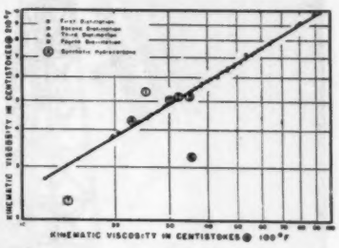


Fig. 6

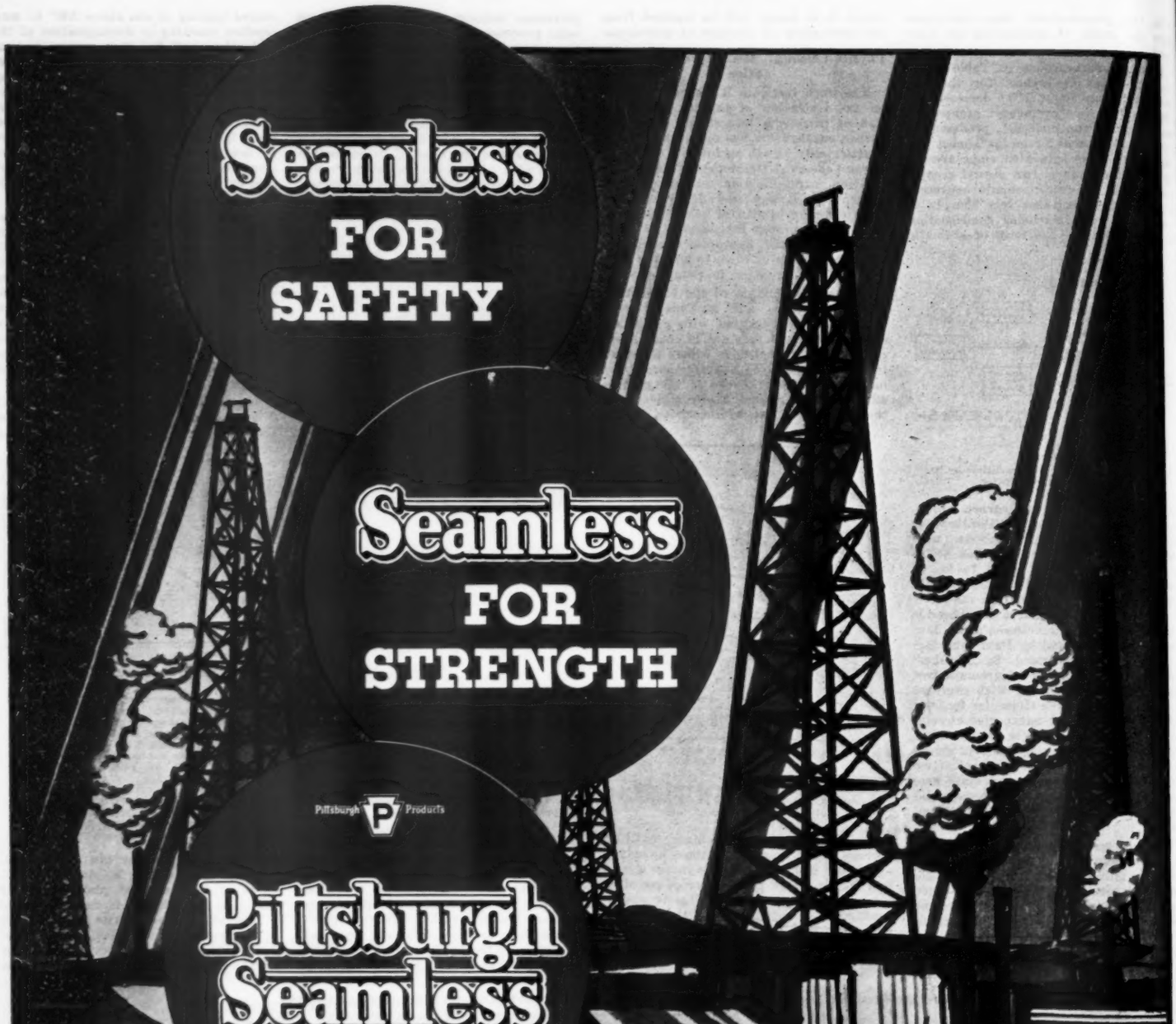
Plot of the logarithm of the viscosity at 210° F. against that at 100° F. for different fractions from various stages of the systematic distillation of the "water-white" oil. The numbers represent the values computed for the hydrocarbons listed as follows: (1) 16-n-Butylhentriacontane; (2) 1, 1-Dicyclohexylhexadecane; (3) 1-Phenyl-2-benzylheptadecane; (4) 1, 1-Diphenylhexadecane; (5) 1-Cyclohexyl-2-hexahydrobenzylheptadecane; (6) Dihydrodiethylanthracene; (7) 1, 4-Di-isobutylnaphthalene

zone is maintained at about 10^{-4} mm. mercury. The charge is placed into C, where it is preheated and completely evacuated, and the oil is then permitted to flow at an approximate rate through the magnetically controlled valve H to the outer surface of the cylindrical tube L, which is the evaporating area. The

TABLE 1—PROPERTIES OF SOME SYNTHETIC HIGH-MOLECULAR-WEIGHT HYDROCARBONS

(Values of kinematic viscosity interpolated from original data, using Cragoe's equation)

Name	Structure	Type	Formula	Value of x in the Formula C_nH_{2n-x}	Ratio No. H atoms / No. C atoms	Refractive Index n_D^{20}	Density d_4^{20}	Kinematic viscosity: 100 deg. F. (Stokes)	Kinematic viscosity: 210 deg. F. (Stokes)	Saybolt Universal viscosity: 100 deg. F. (seconds)	Saybolt Universal viscosity: 210 deg. F. (seconds)	Viscosity Index	Viscosity-Gravity Constant	Gravity Index
16-n-Butylhentriacontane	$CH_3-(CH_2)_{14}-CH(-(CH_2)_3-CH_3)-(CH_2)_{14}-CH_3$	Paraffinic	$C_{50}H_{102}$	2	2.06	1.4679	0.8237	0.2522	0.0541	122.5	44.1	151	0.767	..
1, 1-Dicyclohexylhexadecane	$(C_6H_{11})_2CH-(CH_2)_{14}-CH_3$	Naphthenic	$C_{38}H_{74}$	— 2	1.93	1.4832	0.8791	0.3292	0.0518	157.2	43.4	98	0.831	92
1-Cyclohexyl-2-hexahydrobenzylheptadecane	$C_6H_{11}-CH_2-CH(-CH_2-C_6H_{11})-(CH_2)_{14}-CH_3$	Naphthenic	$C_{30}H_{58}$	— 2	1.93	1.4871	0.8860	0.3052	0.0502	146.2	42.9	103	0.841	83
1, 1-Diphenylhexadecane	$(C_6H_5)_2CH-(CH_2)_{14}-CH_3$	Aromatic	$C_{38}H_{62}$	—14	1.50	1.5121	0.9135	0.2286	0.0423	112.0	40.4	108	0.879	28
1-Phenyl-2-benzylheptadecane	$C_6H_5-CH_2-CH(-CH_2-C_6H_5)-(CH_2)_{14}-CH_3$	Aromatic	$C_{30}H_{46}$	—14	1.53	1.5123	0.9165	0.3445	0.0512	164.3	43.2	85	0.877	31
Dihydro di-β-octylanthracene	$C_{14}H_{10}<(CH_2)_7-CH_3$, $(CH_2)_7-CH_3$	Aromatic	$C_{30}H_{44}$	—16	1.47	.....	0.948	2.93	0.1373	1,390	73.4	—9	0.894	—20
Dihydro di-isoamylanthracene	$C_{14}H_{10}<(CH_2)_2-CH(-CH_3)_2$, $(CH_2)_2-CH(-CH_3)_2$	Aromatic	$C_{24}H_{36}$	—16	1.33	1.5640	0.972	5.40	0.1334	2.580	71.9	—210	0.922	..
1, 4-Di-isobutylnaphthalene	$C_{10}H_6<CH_2-CH(-CH_3)_2$, $CH_2-CH(-CH_3)_2$	Aromatic	$C_{18}H_{28}$	—12	1.33	1.5380	0.933	0.1408	0.0231	74.5	34.4	—284	0.910	..
Dihydrodiethylanthracene	$C_{14}H_{10}<CH_2-CH_3$, CH_2-CH_3	Aromatic	$C_{18}H_{20}$	—16	1.11	.....	1.014	0.3565	0.0323	169.8	37.2	—390	1.000	..



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oil condenses on the surface M, collects in the annular rings N, and flows into the receivers P. The tube L, which is packed with jack chain, is sealed to the flask S, which contains kerosene whose boiling temperature (200° to 250° C.) is controlled by the pressure. The temperature drop (about 15° C.) from top to bottom of the evaporating surface is controlled by regulating the composition of the kerosene. Table 2 shows the data obtained in fractionating in this still a

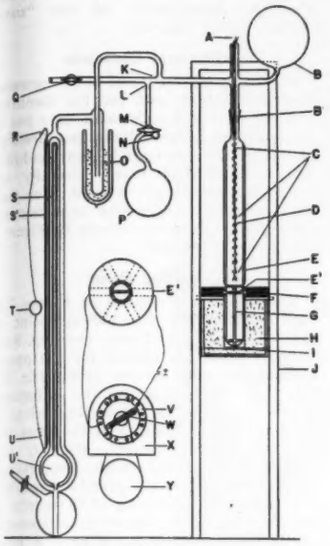

Fig. 7

Sketch of apparatus for measuring the boiling points of lubricating oils at reduced pressures. A, thermo-element leads, B, 3-liter ballast flask; B', ground joint; C, thermo-elements; D, perforated glass-tube; E, vacuum jacket; E', glass-enclosed iron rod; F, electromagnets; G, internal stirrer; H, heater box; I, heating element; J, iron frame; K, connection to McLeod gauge; L, connection to nitrogen flask; M, three-way stopcock; N, measuring bulb; O, trap; P, 2-liter flask filled with dry pure nitrogen; Q, stopcock between pumping system and the boiling-point apparatus; R and U, tungsten seals; S and S', capillary tubes of McLeod gauge; T, galvanometer; U', McLeod gauge; V, discontinuous brass ring; W, rotor; X, commutator; Y, variable-speed motor

charge of "water-white" oil. The viscosity indices of the fractions obtained were practically unchanged from that of the original charge.

Crystallization

The process of fractional crystallization operates by virtue of differences in the composition of the liquid and solid phases, just as fractional distillation is dependent for its operation upon differences in the composition of the liquid and vapor phases. The principle of the crystallization process has for many years been in common use in the petroleum industry in the dewaxing process. For liquids as viscous as lubricating oils fractionation by simple refrigeration is not very efficient, and is sometimes impossible—and crystallization from solvents must be used. In addition to having a low solubility for the desired hydrocarbon at the freezing temperature and an appreciably greater solubility at a higher temperature, an appropriate solvent provides the proper fluidity for the system so that the wanted crystals have a good chance to form. In the present work crystallization from a solvent was used to effect a separation of the "wax" from the original crude oil,[15] and subsequently it will be used on a smaller scale to fractionate the cuts obtained by systematic distillation.

TABLE 2—PROPERTIES OF FRACTIONS RESULTING FROM DISTILLATION OF A CHARGE OF "WATER-WHITE" OIL IN THE COLUMN MOLECULAR STILL (SHOWN IN FIGURE 3)

Fraction—	Weight (grams)	Kinematic viscosity 100° F. (Stokes)	Kinematic viscosity 210° F. (Stokes)	Refractive Index n_D^{25}	Temp. of section of still (deg. C.)
Original	909	1.134	0.1096	1.4861	...
1	219	0.650	0.0747	1.4840	214
2	202	0.966	0.0967	1.4852	214
3	150	1.321	0.1171	1.4860	214
4	117	1.650	0.1351	1.4867	218
5	84	1.987	0.1537	1.4875	228
Residue	127	3.067	0.2165	1.4901	...

TABLE 3—EXTRACTION, WITH ACETONE, OF A "WATER-WHITE" DISTILLATION FRACTION

	Weight (per cent)	Refractive Index n_D^{25}	Kinematic viscosity 100° F. (Stokes)	Kinematic viscosity 210° F. (Stokes)	Saybolt Universal viscosity 100° F. (seconds)	Saybolt Universal viscosity 210° F. (seconds)	Viscosity Index
Original	100	1.4728	0.3653	0.0546	175.8	44.3	93
First extract	12.17	1.4764	0.4174	0.0582	198.2	45.4	87
Second extract	12.42	1.4746	0.4027	0.0578	191.3	45.3	93
Third extract	27.85	1.4722	0.3766	0.0557	179.2	44.6	94
Fourth extract	27.51	1.4705	0.3596	0.0548	171.2	44.3	97
Raffinate	20.05	1.4682	0.3343	0.0546	159.7	44.3	111

TABLE 4—ADSORPTION, WITH SILICA GEL, OF A "WATER-WHITE" DISTILLATION FRACTION

(100 ml. oil plus 150 ml. petroleum ether passed through a column containing 150 g. silica gel, at room temperature)

	Weight (grams)	Refractive Index n_D^{25}	Kinematic viscosity 100° F. (Stokes)	Kinematic viscosity 210° F. (Stokes)	Saybolt Universal viscosity 100° F. (seconds)	Saybolt Universal viscosity 210° F. (seconds)	Viscosity Index
Original	....	1.4734	0.3917	0.0577	186.3	45.2	95
First fraction	15.65	1.4702	0.3565	0.0564	169.8	44.8	107
Second fraction	11.60	1.4717	0.3823	0.0569	181.8	45.0	98
Third fraction	13.44	1.4718	0.3868	0.0571	183.9	45.0	96
Fourth fraction	13.73	1.4718	0.3862	0.0572	183.6	45.1	97
Fifth fraction	10.47	1.4720	0.3871	0.0573	184.0	45.1	97
Silica-gel "hold up"	13.29	1.4819	0.4732	0.0622	224	46.7	84

TABLE 7—NATURE OF ADSORPTION WITH SILICA GEL

("Water-white" oil passed through 102 g. silica gel at 90° to 100° C.)

Material—	Weight (grams)	Refractive Index n_D^{65}	Density 150° F. (Grams per milliliter)	Density 210° F. (Grams per milliliter)	Kinematic viscosity 150° F. (Stokes)	Kinematic viscosity 210° F. (Stokes)
Original	311.58	1.4710	0.846	0.824	0.1360	0.05654
Filtrate	246.44	1.4663	0.838	0.815	0.1245	0.0540
Adsorbed material	64.83	1.4899	0.875	0.851	0.1710	0.0653
Recombination of filtrate with adsorbed material	311.27	1.4710	0.846	0.825	0.1361	0.05657

TABLE 8—RELATION OF BOILING POINT TO REFRACTIVE INDEX, VISCOSITY, AND TEMPERATURE COEFFICIENT OF VISCOSITY, FOR TWO SAMPLES OF "WATER-WHITE" OIL

Sample—	Refractive Index n_D^{25}	Kinematic Viscosity 100° F. (Stokes)	Kinematic Viscosity 210° F. (Stokes)	Boiling Point (at 1 mm. mecury) (°C.)
I Original "water-white" lubricating oil	1.4733	0.3283	0.0547	198
II Tenth (middle) fraction obtained from distillation of I	1.4733	0.3279	0.0518	210.5

Extraction

Fractionation by extraction is a method being developed very extensively by the industry for processing lubricating oil, because that method has particular advantages for fractionating lubricating oil stock. Whereas distillation separates with respect to size of molecule or molecular weight, extraction can, by means of appropriate solvents, be used to separate with respect to both size and type of molecule—although it is usually most effective in separation by type. In the work on Institute Project 6 extraction with sulphur dioxide was used to fractionate the original crude oil, and extraction with appropriate solvents will be used in fractionating the cuts obtained by systematic distillation. Table 3 shows the separation obtained by extracting with acetone a fraction of "water-white" lubricating oil.[16]

Adsorption

Fractionation by adsorption depends upon differences in the selectivity of the solid absorbent for the various components, and is primarily a separation with respect to type of molecule. This method of fractionation has been used by the industry for many years in treating crude oils with clay or fuller's earth. In the work of this project adsorption with silica gel has been used on the dewaxed and sulphur-dioxide-extracted crude oil in order to obtain a "water-white" fraction. Silica gel has been found to be very effective in removing aromatic constituents from the naphtha fraction,[20] and it is believed that this adsorbent will be useful in fractionating the cuts obtained from the systematic distillation of the lubricating oil. Table 4 shows the results obtained by subjecting a sample of "water-white" oil to adsorption with silica gel.[18]

Preliminary Fractionation of a Mid-Continent Oil

The actual fractionation of the lubricating oil portion of a Mid-Continent petroleum was begun by Institute Research Project 6 about January, 1934, and a report of the results obtained to date has been completed by Mair, Schicktanz and Rose.[18]

The physical data on the wax distillate and residuum of the original crude oil are given in Table 5. The oil was distilled in vacuo by the Sun Oil Co., and then shipped to the National Bureau of Standards in tightly sealed metal containers, in an atmosphere of nitrogen.

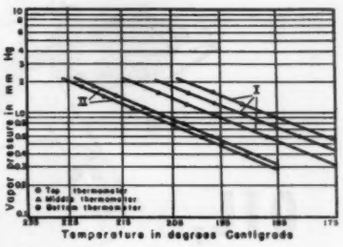

Fig. 8

Vapor-pressure curves of two water-white lubricating oil samples

Sixteen of these fractions (designated as cuts 23 to 38) with a total weight of about 67 kg. and representing about 9.6 per cent of the crude oil, were selected for the primary study. These fractions were dewaxed, extracted with sulphur dioxide, and treated with silica gel in order to obtain, for first investigation, a "water-white" portion which was free of wax, sulphur compounds, and asphaltic and resinous substances.

TABLE 5—PHYSICAL DATA ON THE LUBRICATING FRACTIONS OF CRUDE FROM SOUTH PONCA FIELD, KAY COUNTY, OKLAHOMA

	Wax distillate	Residuum
Yield, % of crude	18.1	10.2
Gravity, ° A.P.I.	29.4	18.1
Flashpoint, ° F.	325	545
Firepoint, ° F.	390	620
Viscosity, Saybolt sec. at:		
100° F.	106	...
210° F.	...	207
Pourpoint, ° F.	80	92

Table 6 summarizes the data on the original cuts, the wax, the sulphur dioxide extract, and the "water-white" oil. The values of the viscosity indices for the various fractions ranged as follows: Original oil, about 75 to 90; wax, about 125 to

TABLE 6—PHYSICAL PROPERTIES OF ORIGINAL OIL, WAX, SULPHUR-DIOXIDE EXTRACT, AND "WATER-WHITE" OIL

	Original oil				Wax				Sulphur-dioxide extract				"Water-white oil"					
	Kinematic viscosity		Density		Kinematic viscosity		Density		Kinematic viscosity		Density		Kinematic viscosity		Density			
Cut No.—	150 deg. F. (Stokes)	210 deg. F. (Stokes)	150 deg. F. (Grams per Milliliter)	210 deg. F. (Grams per Milliliter)	150 deg. F. (Stokes)	210 deg. F. (Stokes)	150 deg. F. (Grams per Milliliter)	210 deg. F. (Grams per Milliliter)	100 deg. F. (Stokes)	210 deg. F. (Stokes)	100 deg. F. (Grams per Milliliter)	210 deg. F. (Grams per Milliliter)	100 deg. F. (Stokes)	210 deg. F. (Stokes)	100 deg. F. (Grams per Milliliter)	210 deg. F. (Grams per Milliliter)	Refractive Index n_D^{25}	Weight (Grams)
23	0.094	0.0460	0.854	0.835	0.0615	0.0330	0.783	0.761	1.89	0.0807	0.989	0.948						
24	0.103	0.0462	0.856	0.836	0.0705	0.0354	0.794	0.773	1.72	0.0828	0.987	0.963	0.214	0.0422	0.849	0.804	1.4684	3,134
25	0.113	0.0480	0.858	0.837	0.0735	0.0379	0.799	0.779	2.60	0.0915	0.983	0.950						
26	0.119	0.0523	0.859	0.839	0.0825	0.0400	0.800	0.780	2.72	0.0942	0.983	0.956	0.257	0.0465	0.847	0.802	1.4704	2,512
27	0.128	0.0536	0.860	0.840	0.0822	0.0410	0.800	0.781	4.12	0.113	0.992	0.958						
28	0.138	0.0575	0.862	0.842	0.0893	0.0472	0.805	0.784	4.57	0.125	0.991	0.955	0.300	0.0498	0.850	0.809	1.4709	2,944
29	0.138	0.0583	0.863	0.843	0.0902	0.0518	0.805	0.786	6.79	0.137	1.012	0.982						
30	0.142	0.0588	0.859	0.839	0.0925	0.0457	0.804	0.783	3.37	0.118	0.971	0.932	0.328	0.0547	0.850	0.821	1.4733	2,189
31	0.176	0.0687	0.865	0.844	0.104	0.0494	0.813	0.792	191	0.359								
32	0.213	0.0828	0.870	0.850	0.118	0.0555	0.812	0.792	....	....	1.067	0.990	0.409	0.0604	0.857	0.831	1.4739	2,314
33	0.256	0.104	0.873	0.856	0.131	0.0777	0.819	0.799	28.5	0.268								
34	0.311	0.108	0.877	0.857	0.173	0.0736	0.826	0.806	....	....	0.993	0.950	0.591	0.0785	0.856	0.819	1.4743	1,608
35	0.329	0.114	0.879	0.859	0.187	0.0785	0.829	0.810	64.7	0.383								
36	0.446	0.146	0.884	0.865	....	0.0835	....	0.807	....	....	1.007	0.960	0.757	0.0882	0.860	0.825	1.4771	958
37	0.557	0.160	0.886	0.867	....	0.0976	....	0.817	384	0.712								
38	0.648	0.187	0.891	0.870	....	0.1102	....	0.818	....	....	1.032	0.970	0.824	0.0952	0.862	0.825	1.4772	505
a	From silica gel hold-up points (See text and Fig. 4) 23-28								2.80	0.122	0.972	0.955	0.605	0.0715	0.878	0.841	1.4909	1,423
b									6.60	0.187	0.967	0.936	0.584	0.0769	0.866	0.826	1.4815	595
c		29-32							8.78	0.255	0.949	0.912	1.13	0.1096	0.873	0.845	1.4861	1,693
		33-38																
					Total wax = 20.25 kg.				Total extract = 17.93 kg.				Total "water-white" oil = 19.78 kg.					

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150; sulphur dioxide extract, about —150 to —300; "water-white" oil, about 100 to 120. The wax was removed by using ethylene chloride as a solvent and chilling to —18° C. The extract was obtained by using sulphur dioxide in batch extractions. In order to remove the remaining sulphur compounds and the asphaltic and resinous materials, and to obtain a stable "water-white" oil, the oil was treated with silica gel after dewaxing and extracting. The data shown in Table 7 indicate that the silica gel as used in these experiments did not crack nor polymerize the hydrocarbons. Figure 3 illustrates the interlocking process used at this stage in order to obtain the maximum amount of "water-white" oil.

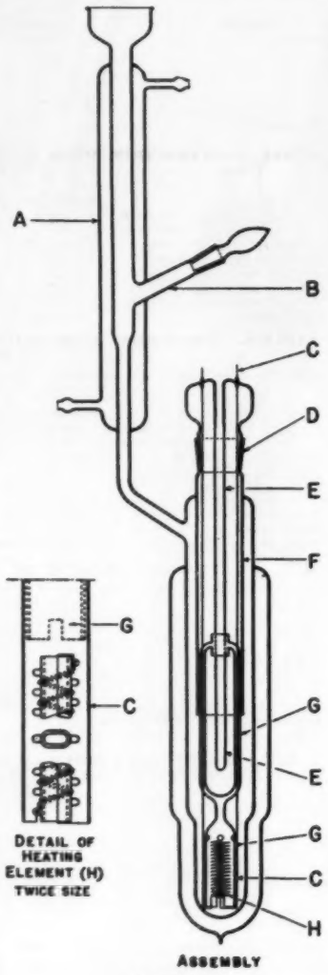

Fig. 9

Ebullioscopic apparatus for determining molecular weights of lubricating-oil fractions. A, condenser; B, tube for introduction of liquid solutes; C, tungsten leads; D, ground-glass joint; E, thermo-element well; F, sheath to protect thermocouple from cold liquid from condenser; G, bell of pumping apparatus; H, resistance heating coil

The "water-white" oil was then fractionally distilled, the more volatile portion in the column shown in Figure 1, and the less volatile portion in the still shown in Figure 2. The results of the systematic distillation of the lighter portion of the "water-white" oil through four stages are shown in Figure 4. Curves I, II, III and IV represent the distillation of cuts 25-26, 27-28, 29-30 and 31-32, respectively. Because it was more convenient to measure the viscosities of the cuts obtained from the still than their true boiling points, and since it was found that there was a satisfactory relation between viscosities and true boiling points of these cuts, the reblending up to this stage was done on the basis of viscosity. Figure 5 shows the relation between the viscosity at 100° F. and the boiling point at 1 mm. mercury (and the vapor pressure at 200° C.) for the middle cuts from each of the seven charges in the fourth stage of the systematic distillation (Figure 4).

Figure 6 shows a plot of the logarithm of the viscosity at 210° F. against that at 100° F. for many different cuts from the various stages of the systematic distillation. This plot indicates that the fractionation was being made, as expected, on the basis of size of molecules rather than type. The numbers on this plot show the values for seven of the synthetic hydrocarbons listed in Table 1, and gives some indication of the average chemical constitution of the "water-white" lubricating oil.

Physical Constants

For the proper control of the processes of fractionation, and for the identification of closely fractionated cuts and of the ultimate hydrocarbons, measurements of density, refractive index, carbon-hydrogen ratio, boiling point, viscosity and molecular weight are needed. For making the three last-named measurements the special apparatus shown in Figure 7 has been assembled.

Boiling Point

The apparatus[21] shown in Figure 7 is used to measure the boiling point at pressures near 1 to 2 mm. mercury. Such measurements are needed for the proper blending of cuts in the systematic distillation. Table 8 shows the differences which may exist in the boiling points of fractions which have about the same values of refractive index, viscosity and change of viscosity with temperature. This same apparatus permits investigation, to a certain extent, of the purity of various cuts with respect to components of different volatility. Figure 8 illustrates such data.

Molecular Weight

The molecular weight of the various oil fractions can be determined with the apparatus[22] shown in Figure 9. The determination consists in measuring directly the difference in boiling point of a pure solvent (benzene, for example) and that of a sample of the same solvent to which has been added a weighed amount of the nonvolatile oil. This ebullioscopic method of boiling-point elevation gives in this apparatus values of molecular weight accurate to within ± 1 per cent. Figure 10 shows some results obtained on a "water-white" oil and an "extract" oil. The true values are those given by the extrapolation to zero concentration. Especially for substances of the nature of lubricating oils, the ebullioscopic method of determining molecular weights possesses certain inherent advantages over the cryoscopic method of freezing-point lowering.

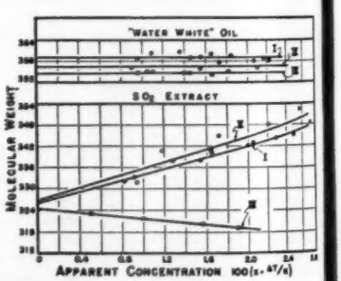

Fig. 10

Results of determinations of molecular weights of a "water-white" oil and an "extract" oil. I, II, III molecular-weight results in n-heptane, 2, 2, 4-trimethylpentane and benzene respectively. The true molecular weight is given by the intercept at zero concentration

Conclusion

Although no definite, pure, individual hydrocarbons have ever been isolated from the lubricating oil fraction of petroleum, the information which has accumulated from the work of all the investigators in this field indicates that the hydrocarbon constituents of the better or more highly refined lubricating oils may include: (1) Naphthenes (saturated cyclic) having one or two rings per molecule and long branched side

(Continued on Page 55)

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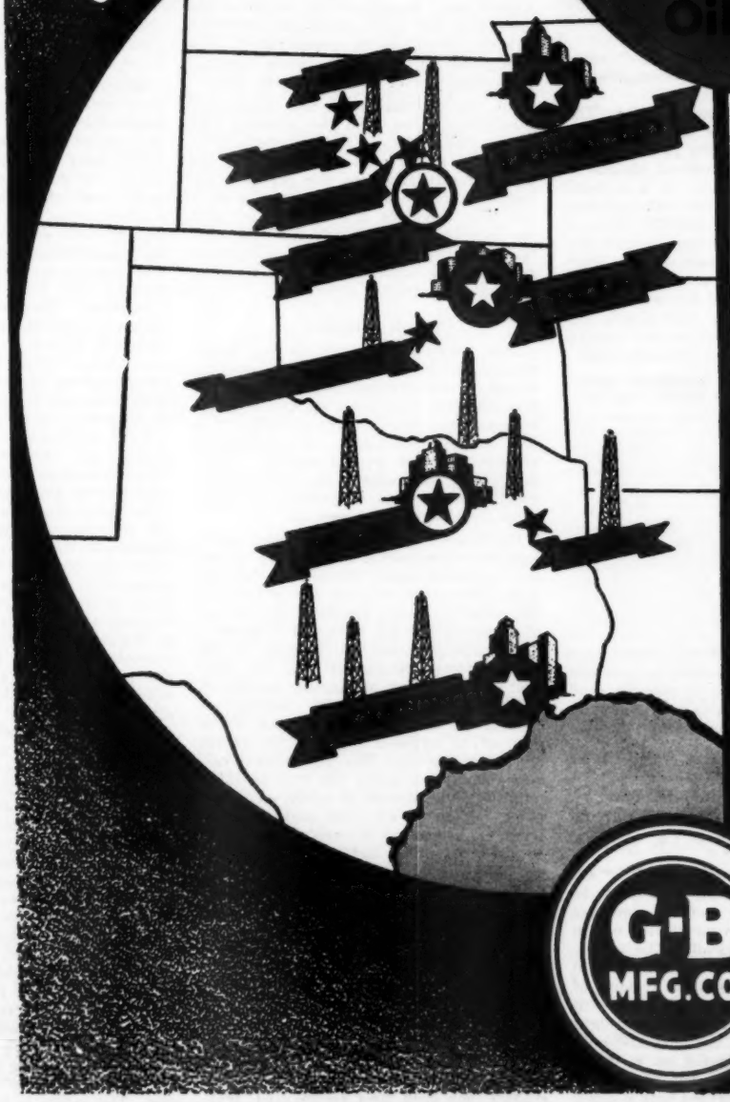

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Examination of Oil Field Waters Essential Protective Measure

By W. R. WIGGINS and C. E. WOOD
University of Birmingham, England

Water analysis is of value to the petroleum engineer for the correlation of waters from well to well in a field, the identification of water appearing in a field, the identification of water appearing in a well, viz.: whether the water is top, intermediate, bottom or edge water, and the identification of water in association with oil. Water analysis is a protective and informative measure, enabling the intrusive water to be identified and the stratum from which it comes to be located. In unproved areas it may afford evidence of the proximity of oil.

The lack of a complete, detailed and tested scheme for water analysis suitable for routine laboratory usage has justified the preparation of this paper, which summarizes certain investigations into methods adopted in the laboratories of this university and which have been employed over a period of six to seven years.

For convenience the analysis is divided into three main sections: (1) General Preliminary Treatment, (2) Determination of Metallic Ions and (3) Determination of Acidic Ions.

PART I

General Preliminary Treatment

Suspended Matter: This must be removed before a quantitative analysis of the water is carried out. The water is passed as rapidly as possible, to minimise evaporation losses, through a large pleated filter paper into a flask. If after filtration the water retains a faint opalescence it is advisable to regard this minute colloidal suspension as part of the dissolved solids. Oil is removed by a separating funnel, and emulsions are centrifuged to effect a separation. Non-corrosive or glass apparatus should be employed, the flask or bottle being capped and labelled with the relevant data. All samples should be in duplicate.

Specific Gravity and Quantity Used for Determination of Various Ions: The specific gravity of the filtered water sample is usually determined by the specific gravity bottle pyknometer or Westphal balance and returned at 60°F. The determination should be carried out in the vicinity of 60°F. in order to keep the correction small, the usual adjustment for variation of density of water with temperature being applied. This variation amounts to ±0.0004 per 5°F., positive for temperatures below 60°F. and negative for temperatures above this value. Corrections for buoyancy of air and expansion of glass are small and need not be applied. The specific gravity should be returned to four decimal places, tolerance of error being ±0.0003 and this necessitates using a specific gravity bottle of capacity greater than 10 g. From the specific gravity the volume of the sample taken for the determination of the ions or the necessary dilution of the sample can be ascertained very approximately from the table given by Reistle and Lane[1].

TABLE 1—PORTION FOR ANALYSIS

Original sample—Specific gravity at 60°F.	Take ml.	Dilute to ml.	Sample for analysis—Use ml.	Factor "D"
1.000 to 1.002 ..	500	...	500	2
1.003 to 1.015 ..	100	...	100	10
1.016 to 1.030 ..	50	...	50	20
1.031 to 1.070 ..	100	500	100	50
1.071 to 1.120 ..	100	500	50	100
1.121 to 1.150 ..	50	500	50	200
Above 1.150	50	1000	50	400

Factor "D" is used to convert the volume used for analysis to the equivalent of 1 liter of the original water.

It is preferable to ascertain roughly the relative amounts of the ions individually by a preliminary qualitative group analysis supplemented by "spot" tests for sodium and potassium, in which the quantity of the water sample taken and the quantities of the precipitate obtained for the particular ions are noted. From this preliminary examination a volume of water can be judged suited for either gravimetric or volumetric determinations.

Determination of Total Solids: This determination is made by evaporating 100 to 500 ml. (according to the specific gravity—to give a minimum residue of 3 to 4 g.) of the water in a weighed porcelain dish on a water bath and then drying for one hour at 180°C. Howard[2] found that this method gave results reasonably close to the sum of the determined constituents for most natural waters. Reistle and Lane[1] for waters with specific gravity greater than 1.025, calculate the total solids from the specific gravity according to the following table:

TABLE 2—RELATION BETWEEN SPECIFIC GRAVITY AND TOTAL SOLIDS

Specific gravity at 60°F. (15.6°C.)	Approximate total solids in parts per million
1.020	27,500
1.030	41,400
1.040	55,400
1.050	69,400
1.060	83,700
1.070	98,400
1.080	113,200
1.090	128,300
1.100	143,500
1.110	159,500
1.120	175,800
1.130	192,400
1.140	210,000

This determination merely serves as a check on the figure obtained by analysis for the sum of the ions in solution, and a large variation (2.5 per cent) between the two values for total solids is customary.

PART II.

Determination of Metallic Ions

This involves the elimination of Si, Fe and Al, and estimation of Ca, Mg, Na, K, and NH_4. [3, 3, 4, 5, 6, 7]

Silica, Iron and Aluminum [3, 7, 8, 9] are not estimated as a rule but must be eliminated before the metallic ions are determined either gravimetrically or, in certain cases volumetrically. The appropriate volume of sample which should leave on evaporation a solid residue of 0.4 to 0.6 g. is slightly acidified with hydrochloric acid in a glazed porcelain dish (diameter 11 cms. capacity 200 ml.) and evaporated to dryness on a water bath or cautiously on a hot plate; the dish and its contents covered with a clock glass are baked in an oven at 200°C. for one hour or at 105°C. for at least 6 hours to dehydrate completely and render the silica insoluble. To the residue after digestion with 5 ml. conc.HCl, 50 ml. water are added and the mixture boiled for one minute. The silica together with insoluble silicates and insoluble matter is transferred to a 12.5 cm. diameter filter paper, (ashless if the precipitate is to be determined), washed with water and rejected. To the filtrate a few drops of conc. HNO_3 are added, the solution boiled, evaporated if necessary to a volume of 100 to 150 ml. and a slight excess of ammonia added. The solution is gently heated to remove excess of ammonia; this removal is necessary to insure complete precipitation of aluminum hydroxide but evaporation should not be carried too far, otherwise the aluminum hydroxide will dissolve. Under these conditions the whole of the aluminum and ferric hydroxides free from calcium hydroxide is precipitated. The precipitate is discarded unless required for estimation of aluminum and iron.

In the estimation of the silica and insoluble residue, also the alumina and ferric oxide, the respective precipitates are dried and placed together with filter papers in crucibles, the papers being burnt off gently at the mouth of a muffle. The crucibles are transferred into the interior of the muffle and the precipitates are brought to the anhydrous condition by igniting for our hour at the full temperature attainable.

Iron Estimates

Iron may be estimated in the ferric and aluminum hydroxide precipitate by dissolving the precipitate in hydrochloric acid diluting and reducing the solution with sulphur dioxide, then titrating with 0.02 to 0.05 N.$K_2Cr_2O_7$. A colorimetric method[10] applied to the original water makes use of ammonium thiocyanate. Should ferrous iron be present oxidation with nitric acid is necessary.

Calcium[9, 11, 12]: The filtrate and washings are concentrated if necessary to 200 ml. approximately; 10 ml. of 10 per cent ammonium chloride are added and the solution, made alkaline with excess of ammonia (20 ml. aprox. of 1 water : 1 of 0.880 ammonia), is brought to the boiling point. Sufficient of a hot solution of 4 per cent ammonium oxalate is added drop by drop with continuous stirring for complete precipitation of the calcium as oxalate, then 10 ml. excess are added rapidly. The precipitated calcium oxalate is boiled for two or three minutes and allowed to settle on a hot plate for about an hour and then filtered. This method if carefully conducted precipitates all but a mere trace of calcium and the precipitate is for all practical purposes free from magnesium provided that a greater quantity of magnesium than the ratio 1 Mg : 1 Ca [13, 14, 15] is not present in the solution, a condition rarely encountered in oil field waters. The precipitate is washed thoroughly with hot water and estimated either gravimetrically or volumetrically.

Gravimetric: In the gravimetric determination, the oxalate is converted to oxide after the paper with adhering precipitate has been first incinerated, ignition in a muffle at 1,050° C. for approximately one hour or at 1,200° C. for five minutes converts the oxalate completely to oxide; the first weighing is a preliminary one and should be followed by a short ignition and a second weighing in which the weights are already placed on the pan and only the rider adjusted.

$$\frac{\text{Weight of CaO in mg.} \times 0.7149 \times \frac{1{,}000}{\text{ml. of water sample taken}}}{}$$

is equal to the concentration of Ca in parts per million.

Volumetric: In the volumetric determination, the filter paper is punctured and the precipitate is washed into a beaker containing dilute sulphuric acid with warm water. The filter paper is treated alternately with warm dilute sulphuric acid and warm water, 100 ml. of dilute sulphuric acid of strength 1 conc. H_2SO_4: 10 water being employed for the determination. The liquid is gently warmed until decomposition is complete and then titrated at 70° C. with O.1.N. $KMnO_4$. As soon as the permanent endpoint is reached the punctured filter paper is transferred to the beaker and agitated with the solution. Should the pink color be discharged, incomplete washing of the filter paper is indicated, only a few drops of $KMnO_4$ should be necessary to restore the permanent pink color of the endpoint.

If a is the number of ml. O.1.N. $KMnO_4$ used, the concentration of Ca in volume of water employed in the analysis is

$$\frac{a}{1{,}000} \times 2.0035.$$

Concentration of Ca in parts per million (mg. per liter) is

$$\frac{\frac{a}{1{,}000} \times 2.0035 \times 1{,}000}{\text{ml. water employed in analysis}}$$

Magnesium. Gravimetric: [13, 14] The filtrate containing approximately 0.06 g. of magnesium, from the calcium precipitate is evaporated in the porcelain dish (originally used for evaporating down the sample of water) until a pasty residue is obtained; the dish is then covered with a clock glass and 10-12 ml. nitric acid (sp. gr. 1.4) are added down the side of the evaporating dish, 0.5 ml. at a time and heating is continued until the ammonium salts have been decomposed and volatilized. The residue, dissolved in water, is acidified with 5 ml. conc. HCl and then dilutel to 150 ml.; 10 ml. of a saturated solution of diammonium hydrogen phosphate are added and the solution with constant stirring for five minutes is brought to neutralization point by careful addition of concentrated ammonia. An additional 5 ml. of concentrated ammonia are added and the solution stirred periodically during 10 minutes. After standing overnight preferably (or four hours as a minimum) the precipitate is filtered off and washed with ammonia solution (3-5 per cent of 0.880 ammonia). No reprecipitation is necessary under these conditions. The precipitate after drying in the filter paper is transferred to a weighed porcelain crucible; the filter paper is burned and the ash added to the precipitate. The crucible with its lid placed so as to allow access of air is ignited gently at first, then more strongly (1,000° C.) until the mass of magnesium pyrophosphate is snow white.

Volumetric: To the original water, ammonium chloride, ammonium hydroxide and ammonium carbonate are added as in the usual qualitative procedure for the separation of the metals of Groups 3a, 3b and 4. The mixture is warmed, filtered (solution of the precipitate in hydrochloric acid and reprecipitation is necessary with a high concentration of calcium to avoid loss of magnesium) and the filtrate and washings made up to volume so that 50 ml. contain 0.02 g. magnesium approximately. Precipitation of magnesium is carried out near the boiling point by adding drop by drop with stirring, a 2 per cent alcoholic solution of 8-hydroxquinoline[13, 19, 20, 21] in slight excess. The excess is indicated by the production of a yellow color. The precipitate is filtered onto a Gooch crucible, washed with water (15-20 ml.), dissolved in as small a quantity as possible of 5N.HCl and the solution made up with distilled water to 2N.HCl approximately. The 8-hydroxyquinoline is bromated quantitatively to 5-7 dibromo-8-hydroxyquinoline

by excess of 0.2 N. bromide-bromate solution, the excess being determined by addition of 10 per cent KI solution and titration of the liberated iodine with sodium thiosulphate.

One Mg is equivalent to 2 C_5NH_4OH which is equivalent to 8 Br. Calcium if present gives a positive error (amounting to 32 per cent for the ratio 2 Ca:1 Mg) which can be eliminated by reprecipitation of the magnesium 8-hydroxyquinolate or calcium may be separated first as described above.

Sodium. (a) Zinc uranyl acetate method:[23, 25, 24] For this the original filtered water can be used, the sodium concentration should lie, however, between 25 and 40 g. NaCl per liter. Five ml. of neutral water, 15 ml. distilled water and 85 ml. of zinc uranyl acetate reagent are put into a small beaker and allowed to stand one hour at 15° C. (For concentrations of sodium between 2.5 and 10 g. NaCl per liter, 5 ml. neutral water, 5 ml. distilled water and 25 ml. of reagent are used.) The precipitate is filtered onto a Gooch crucible, porosity B_1 or B_2, drained by suction and washed with 20 ml. approximate of absolute alcohol saturated with sodium zinc uranyl acetate. The acetate radicle is eliminated by warming the precipitate in the crucible with 5 ml. 60 per cent H_2SO_4 for one hour or until no odor of acetic acid is discernible and fumes and sulphuric acid are evolved. The residual liquor is transferred to a Jones reductor[9, 17] with 50 ml. distilled water and washed through with an additional 50 ml. water. Any uranium which has been reduced to the tervalent condition is oxidized to the tetravalent stage by bubbling air for 10 to 15 minutes through the solution; this oxidation is accompanied by a corresponding color change from dark olive green to pale green. The reduced solution is titrated with 0.1 N.$KMnO_4$ and the usual endpoint color correction applied.[9]

1 Na = 3 U in the triple acetate.
U/10 = 1,000 ml. 0.1 N.$KMnO_4$.
1 Na = 60 × 1,000 ml. N.$KMnO_4$.

$$\frac{23}{60 \times 1{,}000}\ \text{g. Na.} = 1\ \text{ml. 0.1 N.}KMnO_4.$$

Magnesium and calcium in small concentrations do not interfere but in the presence of ammonia, free or combined, large negative errors result.[24]

Zinc uranyl acetate reagent:

Solution A:
Uranyl acetate A.R. 85 g.
Acetic acid glacial, 98 per cent, 50 ml.
Distilled water, 400 ml.

Solution B:
Zinc acetate A.R., 200 g.
Acetic acid glacial 98 per cent, 25 ml.
Distilled water, 250 ml.

The solids are dissolved by heating each solution to 70° C., the solutions are then mixed, cooled and filtered.

(b) Dihydroxytartaric acid method:[25] The filtered original water is treated with ammonium chloride, ammonium hydroxide and ammonium carbonate for the removal of all the metallic ions except magnesium and the alkalies. The filtrate is evaporated to a pasty residue and treated with conc. HNO_3 (cf. magnesium). The residue is dissolved in sufficient water to bring the sodium concentration within the range 20 to 40 g. NaCl (8 to 16 g. Na) per liter. To 5 ml. of the resulting solution 5 ml. 20 per cent dihydroxytartaric acid, 5 ml. potassium carbonate solution (153.9 g. per liter) and 35 ml. distilled water are added and the mixture allowed to stand at 5° C. for four and one-half to five hours. The precipitate is filtered on a small perforated disc covered with two filter papers of slightly larger diameter than the disc, washed with 10 ml. ice cold water and then transferred to a flask containing an excess of 0.1 N.$KMnO_4$ acidified with sulphuric and phosphoric acid and 2 ml. fresh 0.05 per cent ammonium metavanadate solution. The relative quantities of reagents necessary for two concentrations are given:

Na present in 5 ml.	0.1 N.$KMnO_4$ added ml.	5 N. H_2SO_4 ml.	6.5 N. H_3PO_4 ml.
0.0592 g.	60	75	75
0.0788 g.	75	100	100

The volume is made up to 350 ml., allowed to stand 20 minutes, warmed to 52° C., and the excess potassium permanganate titrated with 0.1 N. oxalic acid. It is necessary to apply a positive correction of 5 mg. Na in each determination for the above concentration range.

$$1{,}000\ \text{ml. 0.1 N.}KMnO_4 = \frac{0.1 \times 2 \times 23}{6}\ \text{g. Na.}$$

Potassium:[26, 27] To 5ml. of the water (or the water evaporated down) containing potassium in the concentration range corresponding to 10 to 40 g. KCl per liter, is added 5 ml. distilled water and 25 ml. of a 10 per cent solution of sodium 5-nitro-6-chloro-meta-toluene sulphonate and allowed to stand at 15° C. for one hour. The precipitate is separated on a Gooch crucible, porosity B_1 or B_2, and washed with 10 ml. of water.

For the colorimetric procedure the precipitate is dissolved in 100 to 500 ml. hot water and an aliquot portion (containing approximately 15 to 25 mg. potassium) taken, acidified with dilute sulphuric acid (15 ml. 25 per cent H_2SO_4) and the nitro group reduced by passage of the solution through a Jones reductor. The reduced solution is diazotized with 10 ml. of 0.2 N.$NaMO_2$ solution, coupled with alkaline R-salt (50 ml. 0.6 per cent R-salt in 10 per cent caustic soda) and the resulting color compared in a Lovibond tintometer with standard glasses or compared in Nessler glasses containing known amounts of potassium. To obtain concordant results it is necessary to keep the alkalinity of the solution constant. For this concentration range the error is —8 per cent.

In the volumetric procedure the precipitate is transferred to 50 ml. freshly boiled distilled water and 5 ml. conc. HCl; 40 to 50 ml. 0.5 N.$SnCl_2$ solution[28] are added and the mixture heated on a water bath for one-half hour, the whole operation being carried out in an atmosphere of carbon dioxide. The excess tannous chloride is titrated with decinormal iodine solution. A blank experiment under exactly the same conditions is carried out simultaneously. For this concentration range the error is —7 to —8 per cent.

$$1\ \text{ml. 0.1 N. I}_2\ \text{solution} = \frac{39.10}{60} \times \frac{1}{1{,}000}\ \text{g. K.}$$

In addition potassium may be estimated by means of conversion to potassium perchlorate[29] or potassium cobalt nitrite.[27]

Ammonia.[6, 9, 10] Ammonia in small amounts is a common constituent of natural waters. Free ammonia is estimated by distillation using a splash head to prevent spray being carried over and the distillate is maintained slightly on the acid side by simultaneous titration with 0.1 to 0.2 N.HCl using brom-phenol blue as indicator. Combined ammonia is estimated by the addition of 10 ml. 10 per cent NaOH to the residual water, distillation with simultaneous titration being carried out as before. In public health work 500 ml. of the water are distilled with 1 g. pure sodium carbonate, the distillate being collected in 50 ml. fractions in Nessler glasses. Distillation of the free and combined ammonia is complete in the first 200 ml., the major part being in the first 50 ml. The amount of ammonia in each fraction is determined colorimetrically by adding Nessler's reagent. It is difficult to match accurately colorations deeper than that given by 0.000125 g. NH_3 as ammonium chloride in 50 ml.

PART III

Estimation of Acidic Radicles

This includes the determination of acidity, hydroxide, carbonate, bicarbonate, sulphate, chloride, iodide and hydrogen sulphide.

Acidity: The acidity of natural waters is due to the presence of mineral acids, mineral acids derived from the hydrolysis of salts of weak bases and strong acids, carbonic acid and hydrogen sulphide. The determination of free mineral acid is carried out by titrating a definite quantity of water with 0.1-0.05 N.NaOH using methyl orange as indicator. The determination of acidity by alkalimetry is of little value in the classification of waters and greater importance is attached to the determination of the hydrogen ion concentration. The usual method is to determine the approximate pH of the water by the use of a universal indicator, the exact pH being subsequently determined by comparison of the water with a reference solution of known pH to which a suitable indicator has been added.[6, 30, 30] The acidity of the water is reported as the equivalent amount of $CaCO_3$ in parts per million or simply as the pH value.

Hydroxide, Carbonate and Bicarbonate:[31, 32, 33] Natural waters may contain these ions separately or carbonate and hydroxide or carbonate and bicarbonate.

Qualitative tests: On the addition of four drops (0.2 ml.) of a 1 per cent solution of phenolphthalein to 50 ml. of the water a pink coloration is produced in the presence of carbonate or hydroxide. On the addition of two drops of phenolphthalein to 100 ml. of the hot water which has been treated with 20 ml. of 0.5 N.barium chloride solution a permanent pink coloration is produced in the presence of hydroxide. If the latter solution is colorless and remains colorless on the addition of one drop of decinormal caustic soda solution, the presence of bicarbonate is indicated.

Quantitative determination: To a definite quantity of the water (100-200 ml.) in a beaker, two drops of a 1 per cent solution of phenolphthalein are added and titration is carried out with the tip of the burette immersed under the water, which is given a gentle rotary movement, until decolorization of the indicator occurs. Two drops of a 0.1 per cent solution of methyl orange are then added and the titration continued until the intermediate (yellow-pink) endpoint color is obtained. The acid used should be 0.1-0.2 N.HCl, standardized against sodium carbonate solution of approximately the same alkalinity as the water investigated and with the same quantity of methyl orange indicator.

Hydroxide and Carbonate:

First titration using phenolphthalein as indicator = a ml. acid (standard).
Second titration using methyl orange as indicator = b ml. acid (standard).
Hydroxide is proportional to (a — b).
Carbonate is proportional to (2b).
If 0.1 N.acid and 200 ml. water are employed, then

Normality of solution with respect to hydroxyl (OH) $= \frac{(a-b) \times 0.1}{200}$

g. per liter hydroxyl ion $= \frac{(a-b) \times 0.1 \times 17}{200}$

mg. per liter hydroxyl ion $= \frac{(a-b) \times 0.1 \times 17 \times 1{,}000}{200}$

Normality of solution with respect to carbonate (CO_3), $\frac{2b \times 0.1}{200}$

g. per liter (CO_3) group, $\frac{2b \times 0.1}{200} \times \frac{60}{2}$

mg. per liter (CO_3) group, $\frac{2b \times 0.1 \times 60 \times 1{,}000}{200 \times 2}$

Carbonate and Bicarbonate:

First titration using phenolphthalein = a ml. acid (standard).
Second titration using phenolphthalein = b ml. acid (standard).
Carbonate is proportional to 2a.
Bicarbonate is proportional to (b — a).
If 0.1 N.acid and 200 ml. of water are employed then

Normality of solution with respect to carbonate (CO_3) $= \frac{2a \times 0.1}{200}$

g. per liter (CO_3), $\frac{2a \times 0.1}{200} \times \frac{60}{2}$

mg. per liter (CO_3), $\frac{2a \times 0.1 \times 60 \times 1{,}000}{200}$

Normality of solution with respect to bicarbonate (HCO_3) $= \frac{(b-a) \times 0.1}{200}$

g. per liter (HCO_3) $= \frac{(b-a) \times 0.1 \times 61}{200}$

mg per liter (HCO_3) $= \frac{(b-a) \times 0.1 \times 61 \times 1{,}000}{200}$

Table 3 indicates the necessity for immersing the tip of the burette underneath the surface of the water sample when estimating carbonate, bicarbonate and hydroxide.

TABLE 3

Normality of solution containing Na_2CO_3	and $NaHCO_3$	Experimentally ascertained normality for Na_2CO_3: Tip of burette underneath liquid	Titration carried out in conical flask
		Na_2CO_3	Na_2CO_3
0.05	0.05	0.0500	0.0551
0.07	0.03	0.0691	0.0749
0.03	0.07	0.0308	0.0332

The titrations were carried out in the usual way, two drops of phenolphthalein being used and the liquid rotated on addition of the standard acid. If the burette tip is not underneath the surface of the carbonate-bicarbonate solution there results a high value for carbonate. This precaution is also necessary in the case of hydroxide and carbonate, otherwise a low experimental value for hydroxide and a corresponding high value for carbonate result (loss of CO_2 depresses the percentage of hydroxide).

Sulphate. Gravimetric: An aliquot portion, 100 to 1,000 ml. of the water, containing sulphate radicle equivalent to 0.4 to 0.5 g. $BaSO_4$ as a minimum, is evaporated and treated for the removal of silica, insoluble matter and the tervalent metals iron and aluminum, as described in Part I. The filtrate and washings, which should measure 100 to 150 ml. are acidified with 5 ml. conc. HCl and heated to boiling; a hot 10 per cent solution of barium chloride is added with constant stirring in such quantity as to provide a 4 to 6 ml. excess and boiling is continued for five minutes. The solution is digested just below the boiling point for about an hour and allowed to stand in a warm place for 18 hours before filtering. The precipitate is filtered off on a 12.5 cm. diameter No. 42 Whatman filter paper and washed with hot water until 20 ml. of the filtrate show no opalescence with silver nitrate. The moist barium sulphate together with filter paper is ignited initially at about 300° C. and finally at about 900° C. in a porcelain crucible at the mouth of a muffle furnace to constant weight; or the precipitate may be filtered in a Gooch crucible, dried initially at 100° C., and subsequently at 110 to 120° C. to constant weight. A correction should be made for the solubility of barium sulphate (2.4 mg. per liter at 20° C.), the solubility of which increases with increasing concentration of hydrochloric acid. (See also Popoff, 34.).

Volumetric[14]: To 120 ml. of the water

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or such quantity of the water which when evaporated to 120 ml., contains a concentration of sulphate radicle above 0.04 per cent, 120 ml. of benzidine hydrochloride solution (6.7 g. benzidine dissolved in water with 20 ml. conc. HCl and made up to 1 liter) are added 5 ml. at a time with constant stirring. After 10 minutes standing at room temperature the precipitate is filtered with suction on a porous disc (about 2 cms. diameter) covered with two No. 42 Whatman filter papers of slightly larger diameter, the precipitate remaining in the beaker being transferred to the disc by means of the filtrate, and the precipitate is washed with 15 ml. water. The precipitate, disc and filter papers together with 50 ml. water are titrated at about 50° C. with 0.1 N.KOH, using phenolphthalein as indicator. The method cannot be adopted in the presence of magnesium, tervalent iron and aluminum. The two latter can be removed by the usual process and the former by precipitation as magnesium ammonium phosphate; thus the method can be applied to the filtrate so long as the concentration of neutral salts is not high, moreover the phosphate radicle does not interfere. (Cf. Schroeder, W. C., 35).

Chloride: A rough titration of the water should be made, the dilution if necessary ascertained to adjust the concentration to 0.03 to 0.1 N.NaCl, and a corresponding quantity 75 to 25 ml. of the water titrated with 0.1 N.$AgNO_3$ using 1 ml. of 1 per cent K_2CrO_4. For dilute solution below 0.03 N.NaCl a preliminary titration of the water with 0.1 $AgNO_3$ is necessary to determine the approximate chloride concentration. Into a porcelain dish is placed the equivalent amount of standard sodium chloride solution diluted to the same concentration as the water, 1 ml. 1 per cent K_2CrO_4 solution and 0.1 N.$AgNO_3$ equivalent in amount to the sodium chloride present; the titration is now continued to a permanent red color change and this latter quantity of silver nitrate noted. In a similar manner the natural water is titrated to precisely the same color and the endpoint color correction applied. The procedure should be carried out speedily and in absence of direct sunlight. The above procedure is only applicable to neutral waters, should the water be acidic, calcium carbonate free from halogens is added in excess and the titration with silver nitrate carried out as described. It should be noted that carbonates and hydrogen sulphide react with silver nitrate, and may be eliminated by boiling with a few drops of concentrated nitric acid.

Volhard's method[9, 12] is applicable to acid waters; to 100 to 200 ml. of the water containing approximately 0.1 g. chloride ion, acidified with dilute nitric acid, not more than 5 ml. excess of 0.1 N.$AgNO_3$ is added and the precipitate coagulated by warming and shaking. The silver chloride may be filtered off and the filtrate and washings titrated with ammonium thiocyanate using ferric alum as indicator or titration of the excess of $AgNO_3$ may be carried out in the presence of the precipitated AgCl. If a weighed Gooch crucible is used for filtration, this procedure can be combined with the gravimetric method[28] by weighing the precipitated silver chloride. Volhard's method is satisfactory for the above concentrations of chloride ion but for smaller concentrations the results are too high. High concentrations of sulphates interfere, sulphate being carried down as silver sulphate in the thiocyanate precipitate (cf. Comey and Hahn, Dictionary of Chemical Solubilities, Inorganic, 2nd Ed. 1921, p. 1,013 for solubility of silver sulphate in water and dilute nitric acid.).

The essential points with regard to the gravimetric determination of the chloride ion are: (a) To 200 ml. approximately containing 0.1 g. chloride ion, a 5 per cent $AgNO_3$ solution (containing 0.1 per cent HNO_3) is added in very slight excess with stirring. The mixture is heated to 60° C. and the precipitation allowed to settle. The supernatant liquor should be tested with a few drops of $AgNO_3$ solution and the beaker set aside for a few hours in the dark; (b) washing twice by decantation with hot 2 per cent nitric acid before transference to the weighed Gooch crucible; (c) washing with hot water, until no opalescence is obtained by treatment of the filtrate with dilute HCl, and finally washing with alcohol; (d) drying at 130° C. to constant weight (three to four hours approximately). As a rule the gravimetric procedure gives the higher results owing to adsorption of other salts by silver chloride.

Iodide: The usual method for the determination of iodide is to evaporate 1 to 2 liters of water to approximately 200 ml. and to oxidize the iodide ion in sulphuric acid solution by excess of either (a) chlorine[27, 28, 30, 49]; (b) bromine[41]; (c) sodium hypochlorite, to iodate; in the case of (c) 40 to 60 ml. of 42 per cent phosphoric acid are used. The excess of oxidizing agent is removed by boiling. One per cent KI solution in excess is then added and the liberated iodine titrated with 0.005 N. sodium thiosulphate solution. The iodine estimated corresponds to six times the amount of iodine present in the original water. Parker and Southwell[3] give a standard iodine test (worked out by the Shell-Mex Central Laboratory) in which the iodine present in the water (evaporated down to a definite volume and acidified) is oxidized by hydrogen peroxide and the liberated iodine dissolved in chloroform and estimated either by thiosulphate titration or colorimetrically against standard iodine-chloroform solutions.

Hydrogen Sulphide: For quantitative estimation[5, 6, 32] a definite volume of water is run into a measured quantity of 0.01 N. iodine solution and 20 ml. of 10 per cent KI solution acidified with sufficient 0.1 N.HCl to render the whole solution distinctly acid. The quantity of hydrochloric acid added should be sufficient to neutralize hydroxide and decompose carbonates and hydrosulphides if present. The excess of iodine is titrated with decinormal sodium thiosulphate solution. The method gives the total hydrogen sulphide, normal and acid sulphides present in terms of hydrogen sulphide. Ideal conditions would necessitate the estimation being carried out immediately the sample is obtained and every precaution being taken to avoid loss of hydrogen sulphide.

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(Continued from Page 38)

refinery production cost. This does not take into account the decrease in production of gasoline per still day. In order for the refiner to maintain his required production, additional equipment investment would be required. This would be chargeable to the light gasoline. The 23 per cent then errs on the side of being low.

TABLE 4—ECONOMICS OF CRACKED GASOLINE PRODUCTION

Case—	1934 Typical	1935 Light
Pct. at 212° F.	36	50
Pct. at 282° F.	68	93
Throughput, 50-gal. bbls.	6,000	6,000
Once through, per cent	9.4	5.5
Gasoline, 50's	564	330
Ultimate, per cent	50.0	33.6
Charge, 50's/day	1,128	982
Gasoline, 50's/day	564	330
Fuels, 50's/day	564	652
Debits—per day:		
Charge at $1.75/50 gal.	$1,974	$1,718
Mfg. cost, $/day	250	250
Total debits, $/day	$2,224	$1,968
Credits:		
Fuels at $1/50 gal.	$564	$652
Gasoline, $/day	$1,660	$1,316
$/bbl. (50 gal.)	$2.95	$3.99
c/gal.	5.90c	$7.98c
Per cent increased cost	0%	35%

Table No. 4 presents a similar set of calculations on a cracking still running to gasoline of the two different volatilities. The charging stock to the cracking still in this case is gas oil obtained from the primary distillation of the crude. Here the increased cost of producing the lighter gasoline amounts to almost 2 cents per gallon or a 35 per cent increase in cost. This figure is also low due to the reason previously mentioned.

Since in most refineries gasoline is produced in both of the above ways, Table 5 has been prepared to complete the picture. This is a summary chart combining "natural" and cracked gasoline into a composite picture for the whole crude. This chart shows that the total daily manufacturing costs for the two cases are approximately the same. This is reasonable as we are assuming the same quantity of crude charged per day and operating approximately the same amount of refinery equipment. The amount of gasoline produced per day, however, is not the same. The increase in volatility reduces the gasoline production. Therefore, the cost of gasoline per gallon has increased, the increase amounting to 29 per cent.

Summary of Results

We have indicated the recent marked trend toward lighter gasolines which has resulted in a lack of uniformity in the motor fuels available to the public.

It is true that at present the most volatile gasolines are nearly all in the premium price bracket, but there is a trend toward higher volatility in the standard price range. Temporary excesses of light natural gasolines permit the production of volatile fuels at a low price. However, a general shift to highly volatile gasolines would soon consume these excesses, and result in an increased cost of roughly 20 per cent. The more important picture to the average refiner is the production of cracked gasoline. Here a shift to lighter motor fuel will increase costs up to 35 per cent, in addition to requiring increased cracking capacity.

It has been shown that unless some unforeseen development occurs the motorist will ultimately have to pay about 30 per cent more for whatever benefits he may obtain from the use of a very volatile gasoline.

Acknowledgment

The authors are grateful to L. B. Smith and D. T. Shaw for assistance in the preparation of this paper.

TABLE 5—COMBINING "NATURAL" AND CRACKED GASOLINES INTO A COMPOSITE PICTURE FOR THE WHOLE CRUDE

Type of gasoline—	1934	1935
Crude distillation, charge, 50's	12,000	12,000
Crude naphtha	4,200	2,400
Cracking stock, 50's	6,300	8,100
Fuels (oil and gas) 50's	1,500	1,500
Casinghead avails, 5 per cent crude, 50's	600	600
Total "natural" gasoline, 50's	4,800	3,000
Cracking stock, charge, 50's	6,300	8,100
Cracked gasoline	3,150	2,723
Fuels (oil and gas)	3,150	5,377
Total, distillation and cracking, 50's:		
Crude charge, 50's	12,000	12,000
Casinghead, 50's	600	600
Crude naphtha, 50's	4,200	2,400
Cracked gasoline, 50's	3,150	2,723
Total gasoline, 50's	7,950	5,723
Debits: Crude at $2	$24,000	$24,000
Manufacturing cost: Pipe still	500	500
Cracking	(at 22c) 1,386	(at 25c) 2,025
Casinghead at $3.50	2,100	2,100
Total	$27,986	$28,625
Credit: Fuels at $1	4,650	6,877
Total cost of gasoline produced	$23,336	$21,748
Cost of gasoline, c/gal.	5.88c	7.58c
Per cent increased cost		29%

TEXAS JULY ALLOWABLE

AUSTIN, Tex., June 24.—The Railroad Commission has set the basic allowable oil production for July at 1,063,387 bbls., 2,600 bbls. less than current production, and 1,013 bbls. under the Bureau of Mines market demand estimate.

East Texas allowable was reduced from 3.4 to 3.3 per cent of the hourly potential, on which the estimated production July 1 would be 462,580 bbls. from approximately 18,000 wells. Current production was approximately 465,325 bbls., while the basic amount on June 1 was 462,094 bbls.

Allowables set for other districts: Panhandle, 58,800 bbls.; Moore County, 1,500 bbls.; North Texas, 58,500 bbls.; Foard County, 900 bbls.; West Central, 51,936 bbls.; West Texas, 132,528 bbls.; East Central, 50,887 bbls.; Southwest Texas, 93,640 bbls., and Gulf Coast, 152,116 bbls.

Manville was increased from 5,500 to 6,500 bbls. daily, and the Furman Field 200 bbls. New fields placed under proration since the June 1 order included Sand Hills, Goldsmith, Netterville, Rusk, Loma Alto, Pierce Junction, Worthington, Seven Sisters, Hastings, Jones and Lowe.

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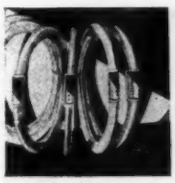
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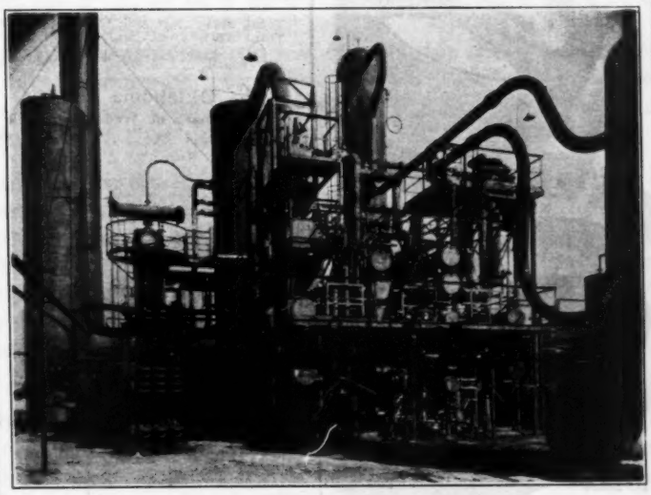
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Summary of Operations in All Fields for the Month of May, 1935

SUMMARY OF ALL FIELDS

Wells Completed

	Comp.	Prod.	Dry	Gas
Pennsylvania Grade	281	665	32	45
Lima	6	25	2	2
Central Ohio	12	121	4	4
Indiana	17	50	10	6
Kentucky	24	913	7	3
Michigan	35	5,008	10	9
Kansas	125	63,650	35	2
Oklahoma	235	57,752	77	11
North Central Texas	250	9,724	116	2
West Texas	67	16,913	17	1
Texas Panhandle	55	38,921	4	6
East Central Texas	24	616	15	1
East Texas	504	28,336	7	0
East Texas (gas field)				
Gulf Coast Texas	81	26,259	24	1
Southwest Texas	118	13,556	48	2
North Louisiana	26	615	13	6
Gulf Coast Louisiana	26	15,414	8	1
Arkansas	18	971	9	0
Mississippi	2	0	1	1
Colorado	2	3,408	0	0
Montana	9	1,012	0	1
New Mexico	23	61,021	5	0
Wyoming	5	360	2	0
Utah	1	0	1	0
Total May	1,946	345,310	447	104
Total April	1,681	335,236	360	129
Difference	265	10,074	87	25

Rigs and Wells Drilling

	Rigs	Dlg.	Ttl.
Pennsylvania Grade	80	221	301
Lima	4	36	40
Central Ohio	13	56	69
Indiana	0	37	37
Illinois	0	9	9
Kentucky	5	23	28
Michigan	113	134	247
Kansas	41	194	235
Oklahoma	65	472	537
North Central Texas	56	226	282
West Texas	67	200	267
Texas Panhandle	57	145	202
East Central Texas	22	45	67
East Texas	170	209	379
East Texas (gas field)	2	13	15
Gulf Coast Texas	36	136	172
Southwest Texas	26	130	156
North Louisiana	35	65	100
Gulf Coast Louisiana	18	80	98
Arkansas	11	32	43
Alabama	1	3	4
Mississippi	2	13	15
Montana	12	63	75
Wyoming	14	62	76
Colorado	4	27	31
New Mexico	15	105	120
Utah	1	12	13
Florida	0	2	2
Total May	870	2,748	3,618
Total April	921	2,802	3,723
Difference	51	54	105

Oklahoma Fields

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Pontotoc	32	22,173	1	2
Osage	30	2,862	6	0
Kay	5	80	4	0
Noble	8	15,814	0	0
Logan	1	1,100	0	0
Oklahoma	5	2,298	2	0
Lincoln	4	0	4	0
Pittsburg	1	0	0	1
Okfuskee	3	50	1	0
Pawnee	1	0	1	0
McClain	1	0	1	0
Pottawatomie	20	2,550	3	0
Seminole	14	9,387	3	0
Stephens	16	92	6	3
Carter	10	547	2	0
Marshall	8	73	0	0
Atoka	1	0	1	0
Tillman	1	0	1	0
Garvin	1	0	1	0
Murray	1	0	1	0
Jackson	7	27	6	0
Caddo	1	0	1	0
Kiowa	1	0	1	0
Beckham	1	0	1	0
Jefferson	1	0	1	0
Cotton	1	0	1	0
Hughes	2	100	0	0
Tulsa	16	67	10	2
Muskogee	3	0	3	0
Okmulgee	19	172	6	2
Creek	17	397	8	1
Commanche	3	23	1	0
Total May	235	57,752	77	11
Total April	153	59,310	46	6
Difference	82	1,558	31	5

Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Alfalfa	1	0	1
Atoka	0	9	9
Beckham	0	3	3
Bryan	0	2	2
Caddo	0	2	2
Canadian	0	1	1
Carter	3	16	19
Choctaw	1	0	1
Cleveland	0	2	2
Coal	0	3	3
Commanche	0	4	4
Creek	2	28	30
Ellis	0	1	1
Garfield	0	2	2
Garvin	0	2	2
Grady	0	5	5
Grant	1	0	1
Greer	1	6	7
Harmon	0	1	1
Hughes	0	12	12
Jackson	0	16	16
Jefferson	1	5	6
Kay	2	4	6
Kiowa	0	2	2
LeFlore	0	1	1
Lincoln	2	5	7
Logan	2	12	14
Love	0	1	1
McCurtain	0	1	1
McIntosh	0	2	2
Major	0	1	1
Marshall	1	5	6
Murray	1	1	2
Muskogee	0	2	2
Noble	0	6	6
Okfuskee	1	18	19
Oklahoma	8	44	52
Okmulgee	0	21	21
Osage	21	46	67
Pawnee	0	2	2
Payne	1	2	3
Pittsburg	0	2	2
Pontotoc	7	64	71
Pottawatomie	5	18	23
Pushmataha	0	1	1
Seminole	4	39	43
Stephens	0	23	23
Texas	0	1	1
Tillman	0	4	4
Tulsa	0	12	12
Wagoner	0	11	11
Washita	0	1	1
Total May	65	472	537
Total April	99	452	551
Difference	34	20	14

Kansas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Ellsworth	8	4,085	4	0
Russell	21	13,637	5	0
Saline	1	0	1	0
Rush	1	0	1	0
Barton	2	926	1	0
Stafford	3	1,724	0	0
McPherson	12	1,412	5	0
Sedgwick	8	2,846	1	0
Butler	1	0	1	0
Elk	4	30	2	0
Rice	21	20,544	1	0
Reno	22	16,393	3	2
Cowley	3	220	1	0
Pawnee	1	0	1	0
Rooks	1	0	1	0
Greenwood	7	50	3	0
Harvey	5	1,463	1	0
Marion	2	0	2	0
Sumner	2	320	1	0
Total May	125	63,650	35	2
Total April	100	56,297	15	3
Difference	25	6,353	20	1

Rigs and Wells Drilling

County—	Rigs	Drlg.	Ttl.
Rooks	1	3	4
Russell	12	32	44
Trego	1	2	3
Ellis	0	1	1
Dickinson	0	1	1
Ellsworth	4	12	16
Barton	2	9	11
McPherson	3	18	21
Rush	0	4	4
Rice	7	31	38
Ness	0	1	1
Scott	0	1	1
Harvey	0	10	10
Reno	4	20	24
Stafford	0	3	3
Butler	1	19	20
Greenwood	0	3	3
Sedgwick	2	4	6
Kingman	1	2	3
Pratt	1	0	1
Sumner	2	7	9
Barber	0	4	4
Cowley	0	3	3
Elk	0	4	4
Total May	41	194	235
Total April	53	221	274
Difference	12	27	39

East Central Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Anderson	9	532	2	1
Angelina	2	0	2	0
Cherokee	2	328	1	0
Ellis	1	0	1	0
Falls	1	8	0	0
Fannin	1	0	1	0
Gregg	226	13,806	1	0
Henderson	2	0	2	0
Limestone	1	0	1	0
Rains	1	0	1	0
Red River	1	0	1	0
Rusk	191	10,367	1	0
Smith	41	2,045	1	0
Upshur	44	1,790	3	0
Van Zandt	5	76	3	0
Total May	528	28,952	22	1
Total April	430	24,893	18	4
Difference	98	4,059	4	3

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Anderson	8	0	11	19

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Angelina	1	5	0	6
Bowie	0	0	1	1
Cherokee	2	3	2	7
Fannin	2	0	1	3
Freestone	1	1	0	2
Gregg	79	1	74	154
Harrison	2	4	1	7
Henderson	1	1	0	2
Hunt	0	1	1	2
Kaufman	1	2	0	3
Leon	0	0	2	2
Limestone	1	0	4	5
Morris	0	2	0	2
Nacogdoches	1	1	1	3
Navarro	0	2	1	3
Red River	1	0	0	1
Rusk	54	3	79	136
Smith	24	3	16	43
Titus	1	0	0	1
Upshur	11	1	27	39
Van Zandt	1	2	1	4
Wood	1	0	0	1
Total May	192	32	222	446
Total April	137	34	240	411
Difference	55	2	18	35

North Central Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Archer	97	3,926	37	0
Baylor	10	1,406	2	0
Brown	5	0	4	1
Callahan	1	0	1	0
Clay	4	16	2	0
Coleman	1	0	1	0
Cooke	13	513	6	0
Denton	1	0	1	0
Eastland	2	68	0	0
Jack	5	0	5	0
Mills	1	0	1	0
Montague	9	898	2	0
Palo Pinto	1	0	1	0
Shackelford	23	502	13	0
Stephens	1	0	1	0
Throckmorton	4	35	2	1
Wichita	26	491	14	0
Wilbarger	10	1,315	2	0
Young	36	560	21	0
Total May	250	9,724	116	2
Total April	220	10,573	93	2
Difference	30	849	23	0

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Drlg.	Ttl.
Archer	9	4	49	62
Baylor	0	2	1	3
Brown	2	4	5	11
Callahan	3	3	2	8
Clay	4	0	3	7
Coleman	1	1	5	7
Cooke	5	4	15	24
Denton	0	2	1	3
Eastland	3	2	9	14
Erath	0	1	1	2
Foard	1	0	1	2
Grayson	0	2	1	3
Hardeman	0	1	1	2
Hamilton	0	0	1	1
Jack	1	4	2	7
Mills	0	1	0	1
Montague	4	1	8	13
Palo Pinto	0	0	1	1
Parker	0	0	4	4
Shackelford	11	6	11	28
Stephens	1	1	3	5
Tarrant	0	1	0	1
Throckmorton	0	1	0	1
Wichita	6	0	21	27
Wilbarger	1	1	8	10
Wise	0	4	0	4
Young	4	5	22	31
Total May	56	51	175	282
Total April	88	66	171	325
Difference	32	15	4	43

West Texas Fields

Summary of Wells Completed

County—	Comp.	Prod.	Abd.	Gas
Crane	1	15	0	0
Culberson	1	0	1	0
Crockett	1	655	0	0
Glasscock	2	59	0	0
Howard	5	1,035	0	0
Jones	5	396	3	0
Kendall	1	0	1	0
McCulloch	3	0	2	1
Pecos	8	824	2	0
Reeves	1	0	1	0
Sutton	1	0	1	0
Stonewall	1	0	1	0
Upton	8	1,718	2	0
Ward	15	7,405	1	0
Winkler	5	2,541	0	0
Total May	67	16,913	17	1
Total April	66	24,293	19	1
Difference	1	7,380	2	0

Summary of Rigs and Wells Drilling

County—	Rgs.	S.D.	Dlg.	Ttl.
Andrews	1	1	5	7
Brewster	0	5	0	5
Cochran	0	1	0	1
Coke	0	1	0	1
Crane	1	1	6	8
Crockett	0	0	3	3
Culberson	0	3	1	4
Dawson	0	2	0	2
Ector	13	0	15	28
El Paso	0	1	1	2
Fisher	4	0	9	13
Glasscock	2	1	2	5
Garza	0	0	1	1
Howard	0	1	22	23
Jeff Davis	0	1	0	1
Jones	0	0	4	4
Kimble	1	0	0	1
Loving	0	1	2	3
Lynn	0	1	0	1
Martin	0	1	0	1
Mitchell	0	1	0	1
McCulloch	0	2	0	2
Pecos	7	3	10	20
Presidio	0	1	0	1
Reagan	0	1	3	4
Reeves	2	0	2	4
Runnels	0	3	1	4
Schleicher	0	0	2	2
Scurry	1	1	1	3
Stonewall	0	0	1	1
Sutton	1	0	0	1
Taylor	0	1	1	2
Terrell	0	1	0	1
Tom Green	0	0	1	1
Upton	6	1	14	21
Ward	14	6	29	49
Winkler	14	3	18	35
Yoakum	0	1	0	1
Total May	67	46	154	267
Total April	62	66	105	233
Difference	5	20	49	34

Texas Panhandle

Summary of Wells Completed

County—	Comp.	Prod.	Dry	Gas
Carson	3	599	0	1
Childress	1	0	1	0
Gray	22	8,895	1	1
Hutchinson	9	2,240	0	0
Moore	4	24	0	2
Wheeler	16	27,163	2	1
Total May	55	38,921	4	6
Total April	57	29,336	5	7
Difference	2	9,585	1	1

Summary of Rigs and Wells Drilling

County—	Rigs	S.D.	Dlg.	Ttl.
Carson	3	2	11	16
Childress	1	0	1	2
Collingsworth	1	0	1	2
Dallam	0	0	1	1
Gray	20	12	49	81
Hutchinson	15	12	22	49
King	0	0	1	1
Moore	1	0	4	5
Ochiltree	1	0	0	1
Randall	0	0	1	1
Roberts	0	1	1	2
Wheeler	16	9	25	50
Total May	58	36	117	211
Total April	43	35	116	194
Difference	15	1	1	17

Southwest Texas Fields

Summary of Field Operations

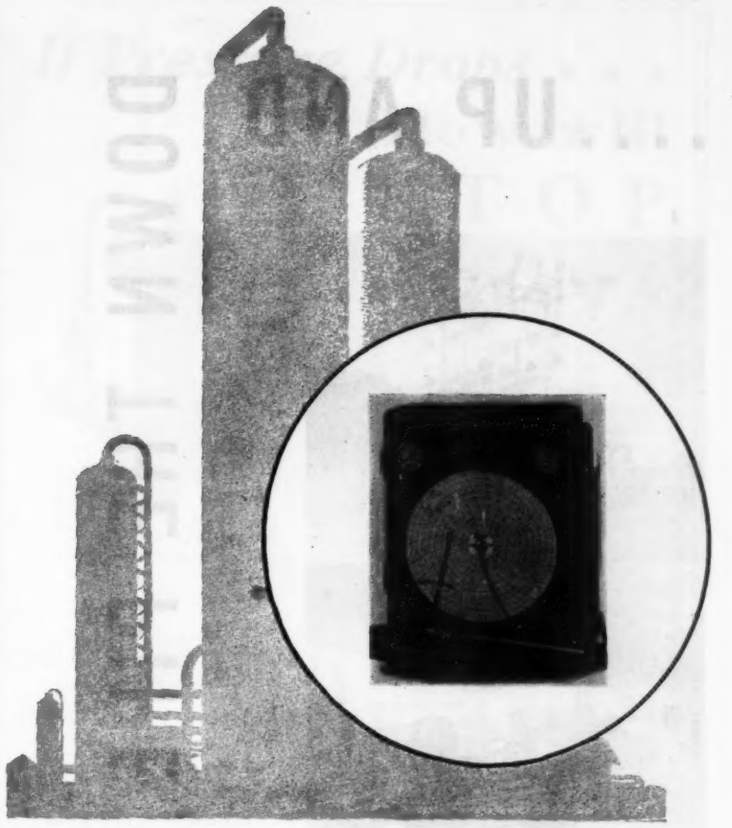
Field—	Comp.	Prod.	Abd.	Gas	Rigs	Dlg.	Ttl.
Angelita	0	0	0	0	1	1	1
Blas Uribe	0	0	0	0	0	1	1
Bruni	6	2,560	1	0	1	2	3
Burnel	0	0	0	0	0	2	2
Caesar	5	700	3	1	0	1	1
West Cole	3	340	0	1	0	3	3
Dimero	0	0	0	0	0	1	1
Dirks	6	1,349	0	0	0	3	3
Dunlap	1	35	0	0	0	0	0
Escobas	1	10	0	0	0	0	0
Sam Fordyce	8	2,028	1	0	1	7	8
Government Wells	12	1,576	1	0	0	1	1
Hoffman	0	0	0	0	1	3	4
Jacobs	4	220	0	0	0	3	3
Jennings	2	10	1	0	0	0	0
Kingsville	0	0	0	0	1	2	3
North Kohler	1	0	1	0	0	0	0
Laurel	3	0	3	0	1	0	1
Loma Novia	7	2,045	1	0	0	4	4
Lopena	1	0	1	0	0	0	0
Los Olmos	0	0	0	0	0	1	1
Lucas	0	0	0	0	0	2	2
Luling	0	0	0	0	1	2	3
McNeil	3	588	0	0	0	1	1
Mercedes	1	150	0	0	0	2	2
Mirando Valley	0	0	0	0	0	1	1
Noack	1	5	0	0	0	1	1
North Pettus	1	100	0	0	0	0	0
Pearsall	1	528	0	0	0	1	1
Placetas	1	0	1	0	0	0	0
Rio Grande City	0	0	0	0	0	1	1
Sandia	1	0	1	0	0	1	1
Sarnosa	5	280	0	0	0	1	1
Saxet	2	250	0	0	0	2	2
Seeligson	0	0	0	0	0	1	1
Seven Sisters	1	100	0	0	0	1	1
Sinton	0	0	0	0	0	5	5
West Tuleta	6	571	1	0	0	2	2
Taylor	0	0	0	0	0	1	1
Von Ormy	2	15	0	0	0	1	1
Worth	1	96	0	0	0	0	0
Miscellaneous	32	0	32	0	19	70	89
Ttl. May	118	13,556	48	2	26	130	156
Ttl. Apr.	101	10,532	48	4	27	125	151
Difference	17	3,024	0	2	1	5	5

Gulf Coast Fields

Summary of Field Operations

TEXAS

Field—	Comp.	Prod.	Abd.	Gas	Rigs	Dlg.	Ttl.
Allen Dome	1	0	0	0	0	1	1
Anahuac	2	1,440	0	0	1	2	3
Arriola	1	0	1	0	0	3	3
Barbers Hill	2	903	0	0	1	7	8
Batson	1	1,992	0	0	1	3	4
Big Hill	0	0	0	0	0	1	1
Big Creek	1	300	0	0	0	0	0
Blue Ridge	0	0	0	0	0	1	1
Boling	0	0	0	0	3	1	4
Clay Creek	0	0	0	0	0	1	1
Cleveland	0	0	0	0	0	1	1
Colette Creek	0	0	0	0	1	1	2
Conroe	7	1,203	2	0	3	6	9
Damon Mound	1	0	1	0	0	1	1
Danbury	1	0	1	0	0	0	0
Dickinson	1	816	0	0	1	6	7
Esperson	0	0	0	0	0	3	3
Fannett	1	300	0	0	0	1	1
Greta	1	90	0	0	0	2	2



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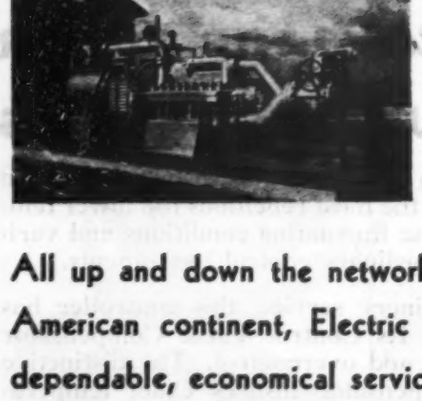

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PETROLEUM ELECTRIC ...POWER CLUB...

Hankamer ...	1	102	0	0	1	5	6
Hastings	1	288	0	0	1	5	6
High Island..	2	480	1	0	3	4	7
Hull	2	780	0	0	1	0	1
Humble	0	0	0	0	0	3	3
Livingston ...	4	756	0	0	2	2	4
Louise	0	0	0	0	0	2	2
McFaddin ...	0	0	0	0	0	2	2
Manvel	5	1,260	0	1	2	10	12
Markham	1	60	0	0	0	0	0
Mykawa	3	1,488	1	0	1	3	4
Orchard	1	1,128	0	0	0	1	1
Pierce Junc. .	4	1,344	0	0	1	2	3
Placedo	0	0	0	0	2	3	5
Pledger	0	0	0	0	1	0	1
Port Neches .	1	254	0	0	0	1	1
Port Lavaca .	1	155	0	0	1	7	8
Raccoon Bend	7	4,517	0	0	0	1	1
Refugio	1	530	0	0	0	4	4
Sour Lake ...	2	115	0	0	0	0	0
San Felipe ..	1	0	1	0	0	1	1
Thompson ...	3	1,555	1	0	0	2	2
Tomball	7	3,443	1	0	1	7	8
Tomoconnor .	1	960	0	0	0	2	2
W. Columbia.	1	0	1	0	0	0	0
Miscellaneous.	13	0	13	0	8	29	37
Total May .	81	26,259	24	1	36	136	172
Total Apr.	110	33,085	28	3	47	131	178
Difference..	29	6,826	4	2	11	5	6

LOUISIANA

Field—	Comp.	Prod.	Abd. Gas	Rigs	Dlg.	Ttl.
Bay Junop ..	0	0	0	0	1	1
Bay. St. Denis	1	1,100	0	0	0	0
Bay St. Elaine	0	0	0	0	1	1
Black Bayou.	0	0	0	0	3	3
Bosco	6	4,296	0	1	1	9	10
Caillou Island	1	0	1	0	0	2	2
Calcasieu Lake	0	0	0	0	0	1	1
Cameron Mds.	2	1,320	0	0	3	1	4
Choctaw	0	0	0	0	1	1	2
Darrow	0	0	0	0	0	1	1
Dog Lake ...	0	0	0	0	0	2	2
Edgerly	0	0	0	0	0	1	1
Four Isle	0	0	0	0	1	0	1
Gillis	2	1,060	0	0	3	7	10
Gueydan	0	0	0	0	0	1	1
Hackberry ...	0	0	0	0	0	6	6
Iowa	1	693	0	0	0	3	3
Jennings	0	0	0	0	0	1	1
Lake Barre ..	1	1,899	0	0	0	2	2
L. Hermitage	1	442	0	0	0	0	0
Lake Pelto ..	0	0	0	0	0	1	1
Leesville	1	1,605	0	0	3	2	5
New Iberia ..	2	2,000	1	0	0	1	1
Port Barre ..	0	0	0	0	0	2	2
Roanoke	1	150	0	0	0	7	7
Sorrento	0	0	0	0	1	0	1
Starks	0	0	0	0	0	1	1
Sulphur	0	0	0	0	0	5	5
Sweet Lake .	1	840	0	0	0	0	0
Vinton	1	0	1	0	0	0	0
White Castle.	0	0	0	0	1	2	3
Miscellaneous.	5	0	5	0	4	16	20
Total May .	26	15,414	8	1	18	80	98
Total Apr. .	37	13,338	18	2	24	74	98
Difference .	11	2,076	10	1	6	6	0

Louisiana Fields

NORTH LOUISIANA

Summary of Field Operations

	Comp.	Prod.	Dry Gas*	Rigs	Dlg.	Ttl.
Avoyelles ...	0	0	0	0	1	1	2
Bienville ...	2	0	2	0	0	0	0
Bossier	1	0	1	0	1	7	8
Caddo	9	125	4	1	9	20	29
Caldwell ...	0	0	0	0	0	2	2
Catahoula ..	0	0	0	0	0	1	1
Claiborne ..	0	0	0	0	0	1	1
DeSoto	1	0	1	0	2	9	11
East Carroll.	0	0	0	0	0	2	2
Grant	1	0	1	0	0	0	0
LaSalle	0	0	0	0	1	1	2
Madison	1	0	1	0	1	0	1
Morehouse ..	1	0	1	0	3	1	4
Natchitoches	0	0	0	0	2	2	4
Ouachita ...	2	0	0	2	3	2	5
Rapides	1	0	1	0	1	0	1
Red River ..	0	0	0	0	0	2	2
Sabine	4	490	1	0	10	12	22
Union	3	0	0	3	1	1	2
Webster	0	0	0	0	0	1	1
Ttl. May .	26	615	12	6	25	65	100
Ttl. April.	29	468	8	11	20	62	82
Difference	3	207	4	5	15	3	8

*Gas production: Caddo, 73,500,000 feet; Ouachita, 12,000,000 feet; Union, 14,000,000 feet; total, 99,000,000 feet.

East Texas Border Counties

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Harrison	0	0	0	0	0	2	2
Marion	0	0	0	0	0	2	2
Panola	0	0	0	0	2	6	8
Shelby	0	0	0	0	0	3	3
Ttl. May .	0	0	0	0	2	13	15
Ttl. April .	1	0	1	0	2	13	16
Difference	1	0	1	0	1	0	1

Arkansas Fields

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Arkansas ...	0	0	0	0	1	0	1
Ashley	0	0	0	0	0	1	1
Calhoun	0	0	0	0	1	0	1
Columbia ...	1	0	1	0	0	2	2
Grant	1	0	1	0	0	0	0
Hempstead ..	0	0	0	0	1	1	2
Lafayette ..	2	0	2	0	2	1	3
Little River.	0	0	0	0	0	2	2
Miller	1	360	0	0	3	7	10
Nevada	0	0	0	0	0	1	1
Ouachita ..	2	8	1	0	0	4	4
Poinsett	0	0	0	0	0	1	1
St. Francis .	0	0	0	0	0	1	1
Sevier	0	0	0	0	0	2	2
Union	11	663	4	0	3	8	11
Woodruff ...	0	0	0	0	0	1	1
Ttl. May .	18	971	9	0	11	32	43
Ttl. April .	9	177	7	0	13	44	57
Difference	9	794	2	0	2	12	14

Mississippi Fields

Summary of Field Operations

	Comp.	Prod.	Dry Gas*	Rigs	Dlg.	Ttl.
Amite	0	0	0	0	0	1	1
Bolivar	0	0	0	0	0	1	1
Clarke	0	0	0	0	0	1	1
Harrison	0	0	0	0	0	1	1
Hinds	0	0	0	0	0	2	2
Jones	1	0	1	0	0	0	0
Lauderdale ..	0	0	0	0	0	1	1
Monroe	0	0	0	0	0	2	2
Rankin	1	0	0	1	0	0	0
Simpson	0	0	0	0	1	1	2
Warren	0	0	0	0	0	1	1
Washington .	0	0	0	0	0	1	1
Winston	0	0	0	0	0	1	1
Ttl. May .	2	0	1	1	2	13	15
Ttl. April .	1	0	0	1	4	12	17
Difference	1	0	1	0	2	0	2

*Gas production: Hinds, 35,600,000 feet.

Alabama Fields

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Covington ..	0	0	0	0	0	1	1
Houston	0	0	0	0	0	1	1
Lamar	0	0	0	0	0	1	1
Pike	0	0	0	0	1	0	1
Ttl. May .	0	0	0	0	1	3	4
Ttl. April .	0	0	0	0	1	3	4
Difference	0	0	0	0	0	0	0

Florida

Summary of Field Operations

	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Walton	0	0	0	0	1	0	1

Rocky Mountain Area

NEW MEXICO

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Chaves	0	0	0	0	1	2	3
Eddy	6	395	4	0	1	12	13
Lea	16	60,626	0	0	8	51	59
McKinley ...	0	0	0	0	2	3	5
San Juan ...	1	0	1	0	2	12	14
San Miguel .	0	0	0	0	0	7	7
Santa Fe ...	0	0	0	0	0	3	3
Valencia	0	0	0	0	1	4	5
Miscellaneous.	0	0	0	0	0	11	11
Ttl. May ..	23	61,021	5	0	15	105	120
Ttl. Apr. ..	22	60,375	2	0	27	87	114
Difference.	1	646	3	0	12	18	6

COLORADO

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Archuleta ...	0	0	0	0	0	2	2
Grand	0	0	0	0	0	2	2
Huerfano .	0	0	0	0	0	2	2
Jackson	0	0	0	0	0	2	2
Larimer	0	0	0	0	0	2	2
Moffat	2	3,408	0	0	2	1	3
Miscellaneous.	0	0	0	0	2	16	18
Ttl. May .	2	3,408	0	0	4	27	31
Ttl. Apr. ..	0	0	0	0	2	29	31
Difference.	2	3,408	0	0	2	2	0

WYOMING

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Big Horn ..	2	210	1	0	4	6	10
Carbon	0	0	0	0	0	7	7
Converse ..	0	0	0	0	1	6	7
Crook	0	0	0	0	0	5	5
Fremont ...	1	110	0	0	1	2	3
Lincoln	0	0	0	0	0	4	4
Niobrara	1	0	1	0	2	6	8
Park	0	0	0	0	1	4	5
Sweetwater .	0	0	0	0	1	2	3
Sublet	0	0	0	0	0	3	3
Uinta	0	0	0	0	0	6	6
Weston	1	40	0	0	4	5	9
Miscellaneous.	0	0	0	0	0	6	6
Ttl. May ..	5	360	2	0	14	62	76
Ttl. Apr. ..	5	5,025	2	1	10	65	75
Difference.	0	4,665	0	1	4	3	1

MONTANA

Summary of Field Operations

County—	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Carbon	0	0	0	0	0	3	3
Cascade	0	0	0	0	0	2	2
Fergus	0	0	0	0	0	3	3
Glacier	7	922	0	0	5	25	30
Liberty	0	0	0	0	0	2	2
Phillips	1	0	0	1	0	2	2
Toole	1	90	0	0	4	20	24
Miscellaneous.	0	0	0	0	3	5	8
Ttl. May ..	9	1,012	0	1	12	63	75
Ttl. Apr. ..	9	610	2	1	17	48	65
Difference.	0	402	2	0	5	15	10

UTAH

	Comp.	Prod.	Dry Gas	Rigs	Dlg.	Ttl.
Total May ..	1	0	1	0	1	12	13
Total April .	0	0	0	0	1	13	14
Difference.	1	0	1	0	0	1	1

Eastern Fields

PENNSYLVANIA GRADE FIELD

Summary of Wells Completed

Field—	Comp.	Prod.	Dry	Gas
Bradford	133	154	0	0
Allegany	2	2	0	0
Venango-Clarion	33	33	0	0
Butler-Armstrong	3	1	0	1
S. W. Pennsylvania	11	28	3	6
Southeast Ohio	55	341	19	13
West Virginia	49	106	10	25
Total May	281	665	32	45
Total April	211	203	16	27
Difference	70	462	16	18

Rigs and Wells Drilling

Field—	Rigs	Drlg.	Ttl.
Bradford	24	64	88
Allegany	1	3	4
Venango-Clarion	2	13	15
Butler-Armstrong	5	4	9
Southwest Pennsylvania	7	19	26
Southeast Ohio	19	46	65
West Virginia	22	72	94
Total May	80	221	301
Total April	68	239	307
Difference	12	18	6

Central Ohio Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Ashland	0	0	0	0	1	4	5
Lorain	2	0	1	1	0	3	3
Holmes	1	0	1	0	4	2	6
Richland	0	0	0	0	0	3	3
Wayne	0	0	0	0	0	3	3
Summitt	2	0	0	2	2	5	7
Coshocton	3	96	1	0	0	2	2
Belmont	2	5	1	0	1	2	3
Tuscarawas	2	20	0	1	0	6	6
Trumbull	0	0	0	0	0	1	1
Crawford	0	0	0	0	0	1	1
Stark	0	0	0	0	3	15	18
Gallia	0	0	0	0	0	4	4
Scioto	0	0	0	0	0	1	1
Pike	0	0	0	0	0	1	1
Carroll	0	0	0	0	0	1	1
Lawrence	0	0	0	0	1	3	4
Perry	0	0	0	0	1	8	9
Delaware	0	0	0	0	0	1	1
Ttl. May	12	121	4	4	13	56	69
Ttl. Apr.	54	51	15	32	38	122	160
Difference	42	70	11	28	25	66	91

Lima Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Wood	0	0	0	0	0	4	4
Henry	0	0	0	0	0	2	2
Lucas	0	0	0	0	0	1	1
Allen	0	0	0	0	0	4	4
Auglaize	1	20	0	0	1	4	5
Ottawa	0	0	0	0	0	1	1
Hardin	1	0	0	1	1	0	1
Van Wert	0	0	0	0	0	3	3
Darke	0	0	0	0	0	3	3
Shelby	1	0	0	0	0	0	0
Sandusky	0	0	0	0	0	2	2
Seneca	1	0	0	1	1	3	4
Wyandot	2	0	2	0	1	6	7
Hancock	0	0	0	0	0	1	1
Putnam	0	0	0	0	0	1	1
Ttl. May	6	25	2	2	4	36	40
Ttl. Apr.	6	0	3	3	7	31	38
Difference	0	25	1	1	3	5	2

Indiana Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Gibson	2	0	2	0	0	4	4
Pike	3	0	2	1	0	2	2
Knox	6	50	1	4	0	3	3
Wabash	1	0	1	0	0	0	0
Decatur	0	0	0	0	0	2	2
Lawrence	0	0	0	0	0	2	2
Adams	0	0	0	0	0	1	1
Cass	0	0	0	0	0	1	1
DeKalb	0	0	0	0	0	1	1
Jay	1	0	1	0	0	1	1
Martin	0	0	0	0	0	2	2
Perry	1	0	1	0	0	4	4
Spencer	0	0	0	0	0	4	4
Fountain	0	0	0	0	0	1	1
Harrison	0	0	0	0	0	1	1
Newton	0	0	0	0	0	1	1
Vanderburg	1	0	1	0	0	0	0
Daviess	2	0	1	1	0	2	2
Posey	0	0	0	0	0	1	1
Shelby	0	0	0	0	0	1	1
Warrick	0	0	0	0	0	1	1
Ttl. May	17	50	10	6	0	37	37
Ttl. Apr.	14	60	4	8	0	36	36
Difference	3	10	6	2	0	1	1

Michigan Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Midland	13	4,525	3	0	19	48	67
Isabella	8	275	3	2	23	28	51
Ogemaw	4	198	1	0	27	11	38
Oceana	1	0	1	0	0	0	0
Gladwin	0	0	0	0	0	4	4
Eaton	0	0	0	0	0	1	1
Hillsdale	0	0	0	0	2	0	2
Clare	0	0	0	0	0	2	2
Lenawee	0	0	0	0	1	0	1
LaPeer	0	0	0	0	3	2	5
Bay	0	0	0	0	0	1	1
Roscommon	1	0	1	0	1	0	1
Mason	0	0	0	0	0	1	1
Chippewa	0	0	0	0	1	0	1
Clinton	0	0	0	0	1	0	1
Arenac	1	0	1	0	0	0	0
Mecosta	4	0	0	4	8	7	15
Montcalm	2	0	0	2	7	18	25
Muskegon	0	0	0	0	5	7	12
Saginaw	0	0	0	0	5	2	7
Gratiot	1	0	0	1	4	1	5
Cass	0	0	0	0	6	1	7
Ttl. May	35	5,008	10	9	113	134	247
Ttl. Apr.	25	6,130	6	11	130	140	270
Difference	10	1,122	4	2	17	6	23

Illinois Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Clark	0	0	0	0	0	4	4
Crawford	0	0	0	0	0	4	4
Jasper	0	0	0	0	0	1	1
Ttl. May	0	0	0	0	0	9	9
Ttl. Apr.	0	0	0	0	0	8	8
Difference	0	0	0	0	0	1	1

Kentucky Fields

Summary of Field Operations

County—	Comp.	Prod.	Dry	Gas	Rgs.	Dlg.	Ttl.
Ohio	20	403	7	3	3	15	18
Hancock	4	510	0	0	2	8	10
Ttl. May	24	913	7	3	5	23	28
Ttl. Apr.	21	540	3	2	0	13	13
Difference	3	373	4	1	5	10	15

Chemical Constitution of Lubricating Oil

(Continued from Page 46)

chains; and, possibly, (2) branched-chain paraffins.

Just as in the case of the naphtha fraction, the most effective separation of the lubricating oil will result from the proper interlocking, combination, and variation of the different methods of fractionation. The first objective of the work of Institute Research Project 6 on the lubricating oil fraction is to separate the oil into close cuts containing molecules of about the same size (or molecular weight or boiling point), and then to subject these cuts to fractionation with respect to type—obtaining fractions which will contain molecules of the same type and size. These isolated fractions will then be identified with respect to size and type of molecule. Once the separation reaches this stage, the way will be made clear for the ultimate separation of pure hydrocarbons.

The knowledge obtained by the project in this work, particularly with regard to the practical separation of the oil into fractions differing both in size and type of molecule, should be of considerable benefit to the industry, which is today vitally concerned with the problem of separating the "good" molecules from the "bad" in the process of making superior lubricating oil from ordinary crude stock.

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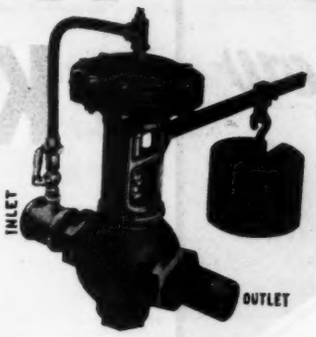
Flow will
STOP
altogether



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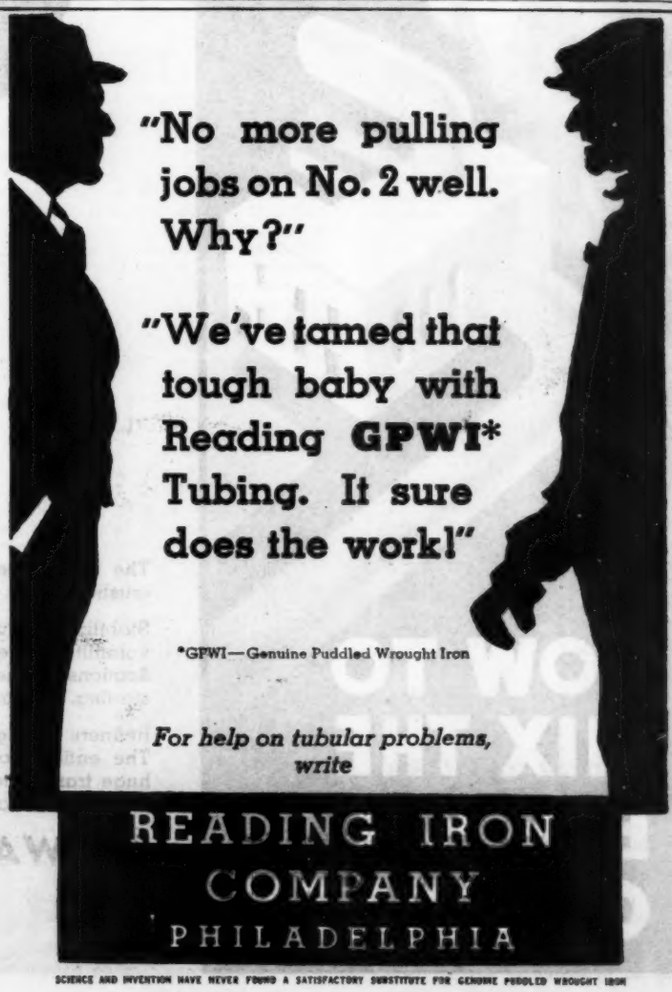

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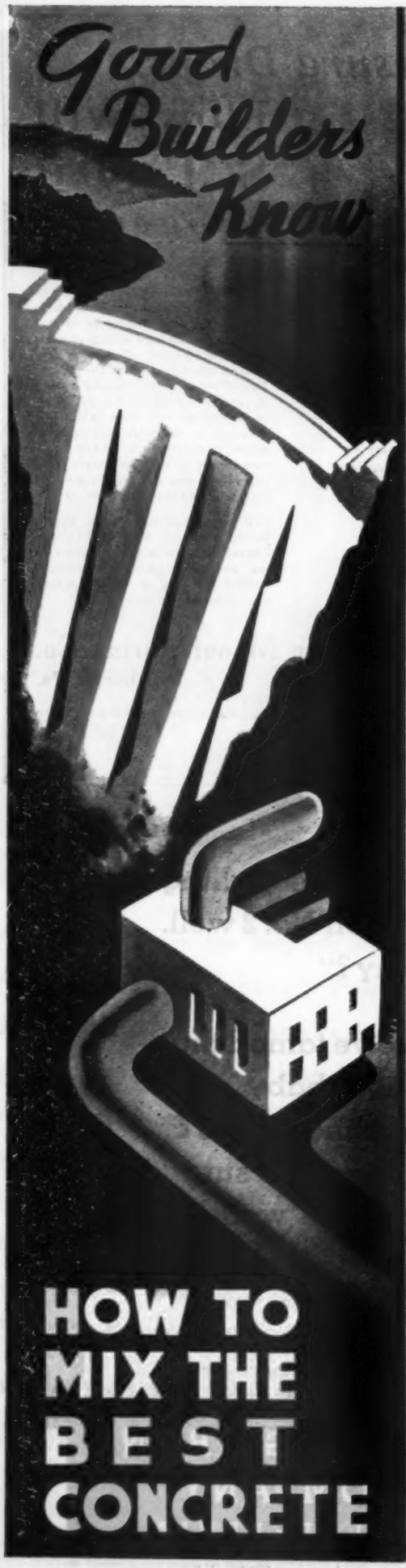

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NATURAL GASOLINE MANUFACTURE

Shamrock Oil Enlarging Panhandle Gasoline Plant

The Shamrock Oil & Gas Co. is undertaking a major program of expansion at its natural gasoline plant in Moore County within the Texas Panhandle area. The capacity of the plant will be increased from 120,000,000 feet of gas daily to 180,000,000 feet and a 20-inch gathering line is being laid to a number of additional wells. The local gas produces about .3 gallon per thousand feet.

While some of the changes being made are the result of a desire to expand, the

Leonard S. Allen, Mid-Continent Supply Co., and E. N. Armstrong, pipe line superintendent Shamrock Oil & Gas Co. at pipe line job near Shamrock gasoline plant, Sunray, Texas

principal cause has been to meet the requirements of the new state gas stripping law. Railroad Commission orders are expected to clarify the present set-up in the Panhandle, but operators are preparing to meet the essential points of the new law, one of which is the economic disposition of the residue gas.

The Phillips Petroleum Co. has been negotiating with the Shamrock company for the latter's residue gas and this has prompted the suggestion that Phillips would purchase the natural gasoline plant and other properties of Shamrock. To date the deal has not been consummated.

The problem of disposing of residue gas in the Panhandle after August 1, when the new law becomes effective, will be simplified for some operators of natural gasoline plants through the erection of additional carbon black plants in the field. One such plant is being proposed for Moore County and at present the United Carbon Co. has a plant under construction just across the Moore County line in Hutchinson near Sanford. Rapid progress is being made on this unit and the most modern equipment is being installed which will permit United to make a dustless product, now finding favor among tire manufacturers.

In readjusting the allocation of gas production and consumption in the Panhandle, the so-called "sour gas area" will take on a new role. Some of this "sour gas" will become sweet gas by definition and carbon black plants will be getting a new mixture of sour and sweet gases in many instances. The sulphur content of Moore County gas is not exceptionally high and there is no reason why the gas cannot be used successfully for the manufacture of carbon black.

The enlargement of the Shamrock plant is being handled by the Sterns-Roger manufacturing Co. under contract with Parkhill-Wade, Inc., consulting engineers.

Operation of Automatic Choke Depends Upon Uniformity of Motor Fuel

Automatic starting devices for cars, particularly the automatic choke, has caused natural gasoline manufacturers, refiners and automotive engineers considerable concern over the past two years in which motor fuel volatility has shown a decided tendency to increase. In discussing the application of automatic chokes, C. H. Jorgensen of the Delco-Remy Corp. stated the following before the meeting of the Society of Automotive Engineers in White Sulphur Springs, W. Va., this week:

"With the fuels we have today, the cold starting problem is not in getting the engine to fire, but rather to provide the correct ratio of fuel to air to allow the engine to start and run, and the amount of this correction is dependent almost entirely upon the volatility characteristics of the fuel being used. An automatic choke calibration can be worked out to provide these corrections, during the initial starting and running periods, with fuels within a limited range of volatility, but it is evident that extremely wide variations in volatility will require relative changes in choke calibration.

"At the present time the 10 per cent distillation temperatures of most of our fuels are comparatively uniform. It is in the distillation temperatures above the 10 per cent that we find the widest variations.

"It would also seem that the vapor lock and percolating properties of our present fuels, due to the increase in low volatility, would be more accurately indicated by taking the 10 and 50 per cent distillation temperatures than is shown by the present method of taking Reid vapor pressures. Our present regular grades of fuel show approximately a 50 per cent distillation at 240° F. for the summer specifications, and 230° F. for the winter specifications. This range can be handled quite satisfactorily with one choke setting, which allows for an overlapping of the winter gasolines into summer temperatures, and the summer gasolines into winter temperatures. In the regular fuels you will notice that there is a difference of only about 10 degrees temperature in the 50 per cent distillation between the regular summer and winter gasolines, whereas there is approximately 100 degrees temperature difference between some of our present 'high test' gasolines in comparison with the regular fuels. It is because of these extreme variations that it is impossible to use one choke setting and expect to get satisfactory operation. We have found that wider variations in volatility can be handled with a given setting as the volatility increases, because the necessary correction for lack of temperature and velocities becomes correspondingly less. For calibrating purposes, and the lack of better classificatios, we have arbitrarily divided the commercial fuels into three volatility ranges, having respectively 50 per cent distillation temperatures of 250° to 220° F., 220° to 180° F. and 180° to 130° F., and we are proving means of accommodating this range of volatility in the design of the automatic choke.

"We have little or no difficulty today in getting the engine to start and fire, even under extremely low temperature conditions, due to satisfactory volatility in nearly all grades of fuel in the 10 per cent distillation temperature range. With our present fuels our cold starting problems have become largely a matter of engine friction, liquid distribution and accumulation, and the providing of the proper fuel to air ratios during the cranking and initial running periods.

"A great deal of very commendable work has been done in the past few years by the oil industry and the car manufacturers in acquainting the public with the importance of engine friction as related to cold starting, and the use of suitable oils for climatic temperature conditions. If the public will use the proper oils to meet these conditions very satisfactory starting results can be obtained with present conventional or average fuels, even in extremely low temperatures.

"We realize that there are certain economical advantages within the oil industry that have tended to widen, rather than narrow, the range of volatility, but it is unfortunate that these extreme variations should have developed in our commercial fuels without more adequate designation as to their properties. In order that the car manufacturers may handle this situation to the best advantage, it is hoped that some effort will be made to better classify and standardize our fuels as to volatility; and at the same time the question arises, can we handle more volatile fuels and further improve engine performance with the present designs of our induction, cooling and ventilating systems?

"The automatic choke and its calibration is just one element of the carburetion problem, but it is only by consideration of these conditions that we can better anticipate the future automatic choke requirements.

"By briefly reviewing our carbureting problems in the past we find that heat, its application and control, has been an important factor in the successful handling of our commercial fuels. Automatic temperature controlling devices have been developed that maintain uniform water jacket and mixture temperatures during normal running conditions, irrespective of climatic temperature conditions. With the development of the automatic choke the necessary carburetor corrections are now provided, during the initial starting and running periods, and there is little need for extreme variation in fuel volatility to compensate for climatic temperature conditions. The art of supplying and controlling the heat requirement in cold temperatures has been well developed, but as a result of style trends, increasing horsepower and higher volatile fuels, we are experiencing some difficulty with our present fuels from vapor lock and percolation under certain driving conditions. A further increase in volatility would likely require new engineering developments and changes in engine design, carburetor design, manifold design, heat application and its controls, grills and louvers as affecting under hood temperatures as well as the fuel supply system. There can be little advantage or need for more volatile fuels under existing conditions, but if we are to handle our present fuels to the best advantage it is of much importance to the industry that we have better classification and standardization. It is hoped that this problem will receive careful consideration as the volatility characteristics of our fuels are of major importance to the practical and economical design and operation of the automobile."

Resume Operation of Two Gulf Coast Plants

AUSTIN, Tex., June 22.—The first definite agreement under the recently enacted Texas gas conservation act has been effected in the Agua Dulce Field in Nueces County, the Texas Railroad Commission announced Saturday.

Approval has been given in a district court at Corpus Christi to an agreement between the Nueces Refining Co. and the United Gas Co. for stripping 10,000,000 feet of gas daily according to Laten Stanberry, chief supervisor of the oil and gas division.

The plant will, under the agreement, strip all United production, retaining the usual share, while the United would take all residue gas from pro rata production on the properties of the Clymore Production Co.

Under the agreement, all other operators in the field would be permitted to come in on the same basis with the United as the Clymore company. The proration of production was based on potential times acreage, with a 320-acre maximum allocation for one well.

Mr. Stanberry said the agreement would be operative until the commission completed potential tests on all wells in South Texas and entered orders based upon investigators now under way concerning the allocation of gas as between fields and properties.

The Nueces plant and Clymore properties for several months had been closed, and the United had at all times contested operation of the stripping plant. The stripping plant's original permit required that all gas be repressured into the formation to which it was indigenous. Subsequently the commission modified the order to permit popping of tail or residue gas. Later that order was revoked. The agreement was drawn at a conference between Mr. Stanberry, A. B. Stevens, a commission engineer; Maston Nixon, receiver for the Nueces and Clymore properties, and Charles I. Francis, legal representative, and another official of the United Gas Co. Stanberry said upon the basis of the district court's approval, the receiver and the United would enter into a contract incorporating the agreement next week.

APRIL EXPORTS DOWN

The following statistics of exports of petroleum and its products for the month of April, 1935, are furnished by the U. S. Department of Commerce. Natural gasoline shows greatly decreased shipments during the month, 284,841 bbls. less than in March, 1935, and 92,110 bbls. less than the total exported in April, 1934.

Exports—	Apr. 1934 barrels	Apr. 1935 barrels
Petroleum	3,723,798	3,775,502
Natural gasoline	111,781	19,671
Gasoline	1,643,140	1,330,288
Illuminating oil	647,899	497,692
Gas oil	1,343,829	611,367
Resid. fuel oil	883,721	652,228
Lubricating oil	647,826	679,540
Greases (lbs.)	5,493,014	7,892,829
Paraffin wax (lbs.)	14,046,554	18,394,139
Asphalt (tons)	11,485	19,552
Coke (tons)	7,230	8,397

DERBY PLANT CONSTRUCTION

Improvements costing $40,000 have been made at the Wichita, Kans., refinery of the Derby Oil Co. since the first of the year. The latest addition to the plant is a hot oil pump powered by a 150-horsepower gas engine. The pump will be operated in conjunction with the cracking unit and will add materially to its efficiency. Another major installation in the refinery this year was a vacuum tower for the manufacture of asphalt.

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THE NATIONAL SUPPLY COMPANY

NEWS FOR PETROLEUM REFINERS

Long-Pending Filtration Patent Suit Is Settled

According to an announcement by G. Howard Hutchins, president of the Filtrol Co. of California, settlement of the patent infringement suit brought against that company by the Contact Filtration Co. of San Francisco has been effected. The patent suit has been pending in the Federal Court for several years.

The decree as written provides that Contact Filtration Co.'s patents are good and valid in law; that said patents have been infringed by the Filtrol Co. and that Filtrol is enjoined from further infringement of Contact Filtration Co.'s patents.

An agreement with Contact Filtration Co. provides that the Filtrol Co. becomes the exclusive licensee for the manufacture of activated clay in the United States and acquires the right of licensing the use of activated, acid sprayed and raw clay to the petroleum industry as well as extending license to others to sell the latter for use under Contact Filtration Co.'s patents. The Filtrol Co., in securing this exclusive agency license under the patents of the Contact Filtration Co., has acquired from Max B. Miller & Co., Inc., the necessary agency rights which that concern has enjoyed for many years. Hereafter, with the sale of acid activated clay under the brand name of Super Filtrol, the Filtrol Co. of California will extend to the purchasers thereof, without additional cost, the right to employ such clay under the patents of the Contact Filtration Co. This license right will include all patents owned by the Contact Filtration Co. which relate to the recolorization, clarification and neutralization of petroleum oils and products thereof.

The agreement provides that Max B. Miller & Co., Inc., may continue in the business of selling acid sprayed and raw clay as heretofore, extending to the purchaser thereof a license to use such clay under the oil processing patents of the Contact Filtration Co.

Completes 40,000-Mile Tour for Pure Oil Co.

C. E. Peterson, on the right, advertising manager of the Pure Oil Co., greets Jimmy Mattern, famous round-the-world aviator, as he returns to Chicago after a

40,000-mile cross-country flight, visiting the company's various sales branches. Jimmy Mattern is at present technical head of the aviation division of the Pure Oil Co.

Refiners Could Gain $40,000,000 in Revenue by Pushing Asphalt Sales

By G. E. EVERETT*

The Federal Government has appropriated $800,000,000 for highway purposes in its federal relief appropriations. About $400,000,000 will go for road building and improvements, the balance for grade crossing elimination. In addition $125,000,000 has been appropriated for regular federal aid to state highway systems. There is available from gasoline taxes collected by state governments an additional $560,000,000 some of which, of course, is diverted to other purposes than highway building. Registration fees on our 24,000,000 motor cars will total another $280,000,000 or more, almost all of which goes into highway construction. All together there is well over $1,500,000,000 available for highway work of all kinds. Some of it is restricted by law from being spent on any except federal aid highways. A large portion of it, however, must be spent on secondary, feeder and farm-to-market roads, some of which are a part of the federal aid system.

There can be no restriction against the use of asphaltic materials on any of these highways. But there is no particular tendency to favor the petroleum industry by use of its asphaltic products. In fact, the tendency is to favor the higher cost portland cement, not because it produces any better results than are possible with asphaltic materials but because of thorough and continuous promotion activities.

A market which will absorb $1,500,000,000 in the next 18 months or two years is entitled to a substantial appropriation for advertising and promotion. But the petroleum industry at large is spending today only about $100,000 a year to the development of its asphalt market. The Asphalt Institute, able and effective within its financial limitations, represents the major activity in the field. In the Mid-Contnent area the Western Petroleum Refiners Association is sponsoring and financing a regional activity carried on by the Low Cost Roads Association. Other local organizations such as the Kansas Low Cost Roads Association and the Missouri Asphalt Association are in the field, but there is a lack of co-ordination. None is adequately financed.

Not all of the $1,500,000,000 that will be spent on highways could possibly be spent for asphaltic materials, of course. Much of it must go for subgrade work, straightening of curves, reducing grades, erection of bridges and culverts, drainage, surveys and administration. For the purpose of estimating a logical advertising and promotion budget let's assume that 10 per cent or $150,000,000 could conceivably be spent for petroleum products and that is extremely conservative.

Aside from resulting in immediate sales of asphalt and road oil a sound advertising and promotion campaign would relieve the severe competitive pressure and bring better prices in the fuel oil market by diverting more residue to asphalt, less to fuel oil. Construction of more paved highways would automatically result in greater consumption of gasoline and lubricating oil, for gasoline consumption has constantly increased in a direct ratio to the increase in improved highways.

Suppose we design our advertising program to educate motorists and the public to the advantages and economies of asphaltic paving—and make no mistake, the advantages and economies are all in favor of asphalt—at the same time working directly with the highway departments for more efficient use of asphaltic materials. Give the highway departments the benefit of all the technical information and experiments of the technologists in the industry.It might be well to point out to refiners contemplating entrance into the asphalt market, the necessity of an experienced technologist in the field.

Some of these roads will require only an oil surface treatment of about 10,000 gallons a mile the first year, about half that amount a year or two later and thereafter lighter annual treatments. Other roads will require—and from the traffic they will have to serve will be entitled to—a substantial surface of the bituminous mat type constructed of asphaltic cementing material and selected aggregate. A treatment of this kind will consume about 30,000 gallons per mile.

On the average it will require about 20,000 gallons of asphaltic material per mile for the original treatment and about 1,000 gallons per mile per year for maintenance.

What would the program amount to in added revenue to the petroleum industry? At the current price of around three cents a gallon for the higher type cutback asphalt (road oil is selling currently for less than 2 cents) it would mean $40,000,000 additional revenue the first year; $48,000,000 in the fifth year and for the 10 years a total of $496,000,000 merely from the logical merchandising of a product which now is neglected. And note that this is new, additional revenue. It does not represent the diversion of income from one channel to another.

Then there is the increased consumption of gasoline and lubricating oils that will result from this increase in improved highways. Let's look at that for a moment considering only the farmers who are now mud-bound several months each year and forgetting the city dwellers who will drive more for business and pleasure over the added mileage. There are 24,000,000 motor cars in the United States. According to the Petroleum Industries Committee 20 per cent or 4,800,000 of them are owned by farmers. And according to the Asphalt Institute and other authorities about 84 per cent of our farms are on dirt roads which are impassable at least three months each year.

In other words, 84 per cent of 4,800,000 motor cars are unable to consume gasoline about one-fourth of each year. Assuming that the farmer would drive his car about 6,000 miles a year (if he had all-weather roads) and that he would average 15 miles to the gallon there is a loss of gasoline consumption of approximately 400,000,000 gallons each year due to road conditions among American farms. At present prices of about 13-cents a gallon (service station less taxes) the increased consumption represents added income of $52,000,000 a year to the petroleum industry.

*Report made to the Western Petroleum Refiners Association.

Refiners Sold 20 Per Cent More Road Oil Last Year

Increased construction of secondary and farm-to-market roads, especially west of the Mississippi River, financed largely by Federal funds, resulted in an increase of more than one-fifth in sales of road oil. From 6,238,898 bbls., valued at $6,289,119 in 1933, sales of road oil by petroleum refineries in the United States increased to 7,702,753 bbls., valued at $10,741,998 in 1934 according to statistics compiled by the Bureau of Mines, department of the interior. The gains were general, except in the Appalachian District, but were greatest in the Rocky Mountain District, the Oklahoma-Kansas-Missouri District, the California District and the Indiana-Illinois-Kentucky District. Increased demand stimulated prices of road oil; the average value of road oil sold at petroleum refineries in the United States was $1.01 in 1933 and $1.39 in 1934.

ROAD OIL SOLD BY PETROLEUM REFINERIES IN THE UNITED STATES, BY DISTRICTS

District—	1934 Barrels
East coast	938,053
Appalachian	88,195
Indiana-Illinois-Kentucky	1,984,414
Okla.-Kansas-Missouri	942,072
Texas:	
Gulf coast	204,888
Rest of State	79,969
Total Texas	284,857
Louisiana-Arkansas:	
Louisiana Gulf Coast	52,464
Northern Louisiana & Arkansas	157,992
Total Louisiana and Arkansas	210,456
Rocky Mountain	1,023,434
California	2,231,272
Grand total	7,702,753

Pennzoil Lets Contract For Distillation Unit

OIL CITY, Pa., June 25.—The Pennzoil Co. let a contract today for the erection of a 4,000-bbl. crude distillation unit to operate in conjunction with its vacuum distillation equipment.

The Pennzoil plant has a crude charging capacity of 8,000 bbls. daily and cracking capacity sufficient to process 5,000 bbls. of raw charging stock daily. The plant is fully equipped to manufacture lubricants and is one of the most complete units in the western Pennsylvania refining area. The new distillation unit will be built by the Alco Products Co.

University of Michigan Offers Refining Courses

The new announcement of courses in chemical and metallurgical engineering at the University of Michigan includes much material pertinent to the study of refinery engineering. Courses are available in fuels and furnaces, chemical technology of the organic industries, unit operations, testing petroleum products, motor fuels and lubricants, and petroleum and motor fuels. Advanced study is also available under Dr. G. G. Brown on natural gasoline and compressed gases and petroleum refinery engineering. In undergraduate work engineering students are given broad fundamental training in chemical engineering. Graduate work offers the opportunity of specialized training in specific fields.

CUSCO PLANT OPERATING

The Cusco Refining Co. has started operating its refinery at Chase, Kans., crude deliveries to the plant through the pipe line of the Standish Pipe Line Co. amounting to 1,000 bbls. per day.

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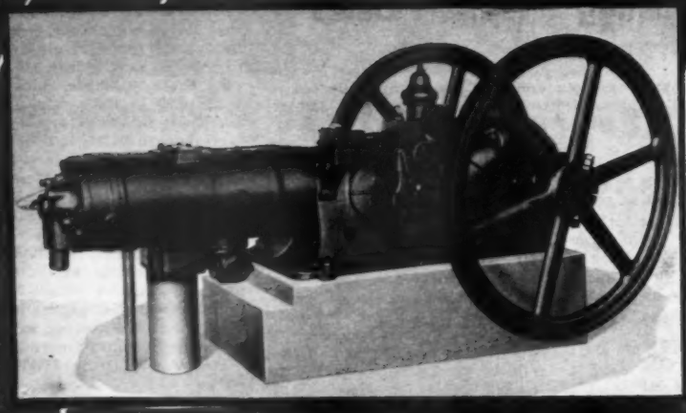

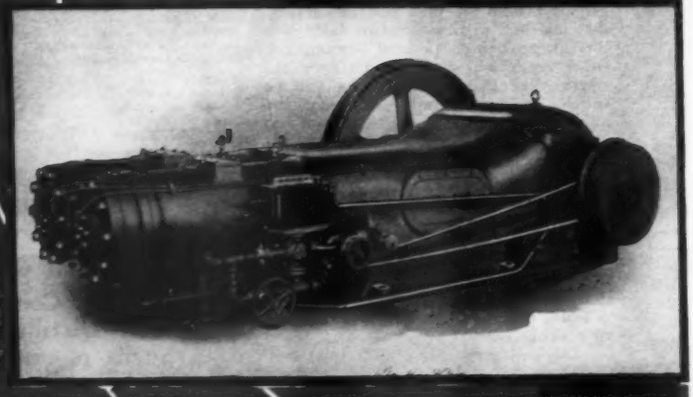

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GAS

			Oil Field	Commercial
11 x 15	Single	Cylinder	30	55
12 x 15	"	"	40	60
13 x 18	"	"	50	70
14 x 18	"	"	60	85
11 x 15	Twin	"	75	100
12 x 15	"	"	100	120
13 x 18	"	"	140	140
14 x 18	"	"	170	170

OIL

			Oil Field	Commercial
11 x 15	Single	Cylinder	30	45
12 x 15	"	"	40	55
13 x 18	"	"	50	65
14 x 18	"	"	60	75
11 x 15	Twin	"	75	90
12 x 15	"	"	100	110
13 x 18	"	"	130	1[illegible]
14 x 18	"	"	150	

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Bad Weather and Politics Failed to Stop Progress of Trade in Chicago Area

By SPECIAL CORRESPONDENT

CHICAGO, June 24.—Despite many handicaps ranging from poor weather to legislative uncertainties, the gasoline market has managed to hold its head up fairly well up to this point. Moreover, there is sufficient spirit left among some sellers to talk of the possibility of still higher tank car gasoline prices in the event that weather ever should turn favorable.

Gallonage has been somewhat mixed and spotty but in spite of everything the total consumption for June—admittedly a bad month—apparently has been running somewhat better than might be expected under the circumstances. District managers of major companies, for example, are especially discursive as to weather conditions in their reports, so much so that headquarters men have characterized them more as weather reports than sales reports recently; but when final results appear, the totals compare fairly well with last year.

Study Code Question

So far as code troubles are concerned, the trade now sees that the nervousness after the NIRA decision of the Supreme Court was unjustified. Moreover, while there are spotty retail troubles, it seems that the general face of the oil market structure or the whole marketing situation, for that matter, is little changed with the code gone. In this region, oil men seem not much in a hurry to push a new voluntary code. There has been some spread in metropolitan centers, such as Chicago, of the giving away of premiums, especially such items as nationally advertised brands of hand soap. However, this problem has not become an acute one. The major companies do not seem disposed to get excited over this type of competition as yet, although it is stated that there is a possibility some reductions will have to be made in some limited areas if practices do not clear up.

The tank wagon and service station structure as a whole, however, seems to be fairly well held in this part of the country. There is a certain amount of rebating by major company dealers and of actual price cutting by non-major dealers. However, the continued firmness of the tank car structure, is not permitting the spread to get very wide to encourage much of this. Moreover, most of the trouble is in the larger cities.

Consider Legislation

The trade is inclined to take sides on the new Thomas oil control measure, but up to this time most of the expression heard in this region is opposed to the bill, regardless of its supposed liberalization. It is claimed here that the bill is little other than a camouflage of the old bill and it seems likely that some determined opposition to it from this section of the country may be encountered.

Offerings of gasoline to jobbers have been of limited size. For the last few days jobbers have been ordering out gasoline fairly actively in anticipation of Fourth of July needs. They also now feel that they may as well order without regard to the possibility of removal of the federal gasoline tax, another consideration which has been holding back orders for some little time. The cars on the highways are rather numerous in the aggregate, partly as a result of the starting of the vacation period. Resort country is attracting some tourists in spite of poor weather. Inquiries in the hands of major companies from prospective tourists in this part of the country are still running heavy.

Kerosene

Kerosene has been bit by poor weather and it seems likely that total consumption of the product has been reduced by reason of the fact that some crops could not be planted at all because of excessive rainfall. Accordingly, kerosene prices are tending a little easier.

Crude Oil Prices

(Continued from Page 30)

Humble Oil & Refining Co. and Texas Co. Effective September 20 in Salt Flat by Shell Petroleum Corp.

Rocky Mountain States

Iles light (Sept. 29, 1933)	$.96
Iles, heavy (Sept. 29, 1933)	.90
Florence, Colo. (June 17, 1933)	.80
Fort Collins and Wellington, Colo. (June 17)	(See Salt Creek prices)
Big Muddy (Sept. 29, 1933)	1.01
Frannie, light (May 1, 1934)	.70
Frannie, heavy (Sept. 29, 1933)	.62
Salt Creek and LaBarge (Sept. 29, 1933)	
See Stanolind Mid-Continent price schedule	
Grass Creek, light (Sept. 29, 1933)	1.18
Grass Creek, heavy (Sept. 29, 1933)	.62
Elk Basin (Sept. 29, 1933)	1.18
Rock Creek (Sept. 29, 1933)	1.02
Lance Creek (Dec. 16, 1932)	.92
Hudson (June 2, 1931)	.65
Lost Soldier (Sept. 30, 1933)	.88
Hamilton Dome, all grades (Feb. 16, 1935)	.57
Torchlight (Sept. 29, 1933)	1.18
Greybull (Sept. 29, 1933)	1.18
Pondera (Sept. 29, 1933)	1.35
Sunburst (Sept. 29, 1933)	1.35
Cat Creek, Montana	1.07
Hogback (Sept. 29, 1933)	1.11
Lea County, N. Mex. (Sept. 29, 1933)	.75
Maljamar (Sept. 29, 1933)	.70
Artesia-Jackson (Dec. 1, 1933)*	.75

Note—Salt Creek, Torchlight, Elk Basin, Grass Creek, Frannie, Greybull, Hogback and Iles by Stanolind Oil & Gas Co. Elk Basin, Grass Creek light, Big Muddy, Rock Creek and Sunburst by Ohio Oil Co. Lost Soldier posted by Producers & Refiners Corp. Artesia, Jackson and Maljamar posted by Continental Oil Co. Lea County, effective September 29, 1933, by Humble Oil & Refining Co. and other buyers; Fort Collins, Wellington, Orchard, Florence, Big Muddy, Cat Creek, Rattlesnake and Table Mesa by Continental Oil Co. Osage posted by Arro. Hamilton Dome, Wyo., by Stanolind Oil & Gas Co. Pondera, Mont., by Ohio Oil Co. (Stanolind Oil & Gas Co., effective January 1, 1935, posted $1 per barrel in Pondera.)

*Continental Oil Co.

North Louisiana and Arkansas

Smackover, Ark. (all grades)	$.78
Tullos, Urania, La. (Jan. 12, 1934)	.87
Nevada, Ark. (Sept. 29, 1933)	.60
East El Dorado (Sept. 29, 1933)	.70
Converse, La. (Mar. 17, 1934)	1.08
Elm Grove, La. (Sept. 29, 1933)	.75
Holly, La. (Nov. 17, 1934)	1.08
Pleasant Hill, La. (Mar. 17, 1934)	1.08
Zwolle, La. (Mar. 17, 1934)	1.08
Champagnolle, Ark. (Mar. 17, 1934)	.81
Lisbon, Ark. (Mar. 17, 1934)	1.08
Stephens, Ark. (Sept. 29, 1933)	.70
Urbana, Ark. (Mar. 17, 1934)	.60
Other fields	(See gravity table)

Note—Smackover: Effective September 29, 1933, Texas Co., Magnolia Petroleum Co., Standard of Louisiana, Louisiana Oil Refining Corp., Gulf Refining Co. and Phillips Petroleum Co. East El Dorado posted by Magnolia Petroleum Co. and Gulf Refining Co., Navada by Standard Oil Co. of Louisiana. Urbana posted by H. L. Hunt, Inc., and Louisiana Oil Refining Co. Converse, Holly, Zwolle and Urbana by Standard Oil Co. of Louisiana; Elm Grove by Simmons Oil & Refining Co.; Piesmant Hill by Standard Oil Co. and Magnolia Petroleum Co.; Champagnolie by Standard Oil Co. and Lion Oil & Refining Co.

Eastern States

TIDE WATER PIPE CO.
(Effective May 16, 1935)

Bradford, Pa.	$2.20
Allegany, N. Y.	2.20

SOUTH PENN OIL CO.
(Effective May 16, 1935)

Pennsylvania Grade Oil in National Transit Lines (Bradford Field)	$2.20
Pennsylvania Grade Oil in Southwest Pennsylvania Lines	1.92
Pennsylvania Grade Oil in Eureka Pipe Line lines	1.87
Pennsylvania Grade Oil in Buckeye Pipe Line lines	1.77
Corning Grade Oil in Buckeye Pipe Line Co.'s lines (Oct. 2, 1933)	1.87

PENNZOIL CO.
(Effective May 16, 1935)

Pennsylvania Grade Oil in National Transit Lines:	
Group A (Includes Cochran, Franklin, Hamilton and Doolittle districts.)	$2.17
Group B (Includes Titusville district.)	2.16
Group C (Includes Turkey and Tidioute districts.)	2.15
Group D (Includes Bear Creek and Porkey districts.)	2.14
Group E (Includes Eldeneau, Bull Creek, Rough Run, Carbon, Dipner, Bredlin, McJunkin, Jameson, Kennerdell, Emlenton, Tiona, Lacey and Kinzua districts. Price depends on length of pipe line haul to plant at Oil City.	2.11

PURE OIL CO.
(Effective May 16, 1935)

Cabin Creek, W. Va.	$1.87
Bradford Hollow, W. Va.	1.87
Kelly Creek, W. Va.	1.87

Middle Western States

OHIO OIL CO.

Lima (Feb. 1, 1935)	$1.15
Illinois (Jan. 5, 1934)	1.13
Princeton, Ind. (Jan. 5, 1934)	1.13
Plymouth	Shut in
Midland, Mich. (Sept. 30, 1933)*	1.02
West Branch, Mich.	.86
Oceana, Mich. (Oct. 5, 1933)	.90
Somerset, Ky. (May 20, 1935)	1.13
Western Kentucky (May 22, 1935)	1.13

*Posted by Pure Oil Co. and Simrall Pipe Line Co. Producers Pipe Line Co. pays 5 cents per barrel over Pure Oil Co.'s posted prices. West Branch, Mich., posted by Simrall Pipe Line Co. Somerset, Ky., crude purchased by Ashland Refining Co., Ashland, Ky., and posted prices includes premium. Oceana posted by Old Dutch Refining Co. and Naph-Sol Refining Co.

Canada

Ontario (September 9, 1933):	
Petrolia*	$2.10
Oil Springs	2.17
Turner Valley (May 21, 1934):†	
Clear naphtha	$2.55
Discolored naphtha	2.37
Crude oil, 50 gravity	2.19
Crude oil, 45 to 49.9	2.07
Crude oil, 40 to 44.9	1.90

*Imperial Oil, Ltd. †Imperial Oil, Ltd., and Regal Oil & Refining Co.

Mexico

Panuco*	$1.91

*F.o.b. ship, based on April transactions and exclusive of production and export taxes and bar dues.

California Crude Oil Prices

STANDARD OIL CO. OF CALIFORNIA
(Effective September 6, 1933)

For current purchases of crude oil at the well (unless otherwise specified). (All gravities above those quoted take highest price offered in that field)

Gravity—	Long Beach	Seal Beach, Alamitos Heights	Huntington Beach	Inglewood	Playa del Rey	Olinda, Brea Canyon	Athens-Rosecrans	Torrance	Richfield	Whittier, La Habra	Montebello	Santa Fe Springs	La Habra-Coyote	Midway-Sunset, Elk Hills, Buena Vista Hills	Lost Hills	Coalinga	Coyote
14-14.9	$.65	$.65	$.65	$.65	$.65	$.65	....	$.65	$.65	$.65	$.65	....	$.65	$.57	$.57	$.57	$.65
15-15.9	.65	.65	.69	.69	.66	.69	....	.66	.65	.65	.65	....	.65	....	....	....	.65
16-16.9	.66	.65	.72	.73	.69	.73	....	.69	.67	.68	.65	....	.65	....	....	....	.65
17-17.9	.69	.65	.75	.76	.73	.76	....	.72	.70	.71	.65	....	.68	....	....	....	.68
18-18.9	.72	.65	.78	.80	.76	.79	....	.75	.74	.74	.65	....	.71	.61	.61	.59	.71
19-19.9	.75	.65	.81	.83	.80	.82	....	.78	.78	.78	.65	....	.74	.64	.65	.62	.74
20-20.9	.78	.68	.83	.87	.83	.85	....	.81	.82	.81	.66	....	.78	.67	.69	.65	.78
21-21.9	.81	.72	.86	.90	.87	.88	....	.83	.85	.84	.69	$.72	.81	.70	.73	.68	.81
22-22.9	.84	.76	.89	.94	.90	.92	....	.85	.89	.87	.72	.76	.84	.73	.76	.72	.84
23-23.9	.88	.81	.92	.97	.94	.95	$.83	.89	.92	.90	.76	.79	.87	.77	.79	.75	.87
24-24.9	.91	.85	.95	1.01	.97	.98	.86	.92	.97	.93	.80	.83	.90	.81	.82	.78	.90
25-25.9	.94	.89	.98	....	1.00	1.01	.90	.95	1.00	....	.85	.87	.93	.85	.85	.81	.93
26-26.9	.97	.93	1.01	....	1.04	1.04	.94	.98	1.04	....	.89	.90	.96	.89	.88	....	.96
27-27.9	1.00	.98	1.04	....	....	1.07	.97	....	1.08	....	....	.94	.99	.93	.91	....	.99
28-28.9	1.03	1.02	1.07	....	....	1.10	1.01	....	1.11	....	....	.98	1.02	.97	.94	....	1.02
29-29.9	1.06	1.05	1.09	....	....	....	1.04	....	1.15	....	....	1.01	1.05	1.01	.97	....	1.06
30-30.9	1.09	1.10	1.12	....	....	....	1.08	....	....	....	....	1.05	1.09	1.05	1.00	....	1.09
31-31.9	....	....	....	....	....	....	1.12	....	....	....	....	1.08	1.12	1.09	....	....	1.12
32-32.9	....	....	....	....	....	....	1.15	....	....	....	....	1.12	1.15	1.13	....	....	1.15
33-33.9	....	....	....	....	....	....	....	....	....	....	....	1.16	1.18	1.17	....	....	1.18
34-34.9	....	....	....	....	....	....	....	....	....	....	....	1.19	1.21	....	....	....	1.21
35-35.9	....	....	....	....	....	....	....	....	....	....	....	1.23	....	....	....	....	....
36-36.9	....	....	....	....	....	....	....	....	....	....	....	1.26	....	....	....	....	....
37-37.9	....	....	....	....	....	....	....	....	....	....	....	1.30	....	....	....	....	....
38-38.9	....	....	....	....	....	....	....	....	....	....	....	1.34	....	....	....	....	....

Additional Standard Oil Quotations

Mountain View—Effective July 3, 1934, the following are the prices of the Standard Oil Co. of California for its current purchases of crude oil at the well in the Mountain View Field: 14 to 19.9 degrees, 57 cents; 20-20.9, 58 cents; 21-21.9, 59 cents; 22-22.9, 61 cents; 23-23.9, 63 cents; 24-24.9, 66 cents; 25-25.9, 69 cents; 26-26.9, 72 cents; 27-27.9, 75 cents; 28-28.9, 78 cents; 29-29.9, 81 cents; 30-30.9, 84 cents; 31-31.9, 87 cents; 32-32.9, 90 cents; 33 and above, 92 cents.

Elwood Terrace—F.o.b. ship, 33 degrees, $1.03; 34 degrees, $1.06; 35-35.9, $1.09; 36-36.9, $1.12; 37 degrees and over, $1.15.

Newhall—14 degrees and over, 57 cents.

McKittrick and Kern River—14 degrees and over, 57 cents.

Wheeler Ridge—14 to 17.9 degrees, 57 cents; 18-18.9, 58 cents; 19-19.9, 61 cents; 20-20.9, 64 cents; 21-21.9, 67 cents; 22-22.9, 70 cents; 23-23.9, 73 cents; 24-24.9, 76 cents; 25 degrees and over, 79 cents.

Kettleman Hills—33-33.9 degrees, 93 cents; 34-34.9, 96 cents; 35-35.9, 99 cents; 36-36.9, $1.02; 37-37.9, $1.05; 38-38.9, $1.08; 39 degrees and over, $1.11.

The Texas Co. posted in Shiells Canyon, South Mountain and Santa Paula as follows: 14 to 17.9, 57 cents; 3 cents added for each degree up to and including 26-26.9 degrees at 84 cents; then 4 cents added for each degree up to and including 30 degrees and over at $1. Company posts Standard Oil Co.'s Montebello prices in Montebello and North Whittier, and posts Standard Oil Co. prices in Signal Hill, Alamitos Heights, Huntington Beach, Torrance, Richfield and Santa Fe Springs, all effective September 6.

General Petroleum Co. posts Standard Oil Co. prices in Athens, Rosecrans and Signal Hill; Alamitos Heights up to 26-26.9; Santa Fe Springs up to 35-35.9; Richfield up to 25-25.9; Brea Canyon and Olinda up to 25-25.9, and Torrance up to 25-25.9.

Union Oil Co., effective September 6, posts same price as Standard Oil Co. in all fields in which both purchases, excepting that in Athens-Rosecrans, Union Oil Co. posts 21-21.9, 72 cents, and 33-33.9, $1.16; 34-34.9, $1.21, and 35-35.9, $1.24.

Associated Oil Co., effective September 6, posted same prices for the same grades as Standard Oil Co. of California, excepting that in some fields its gravity scale stops as follows: Huntington Beach, 36 degrees and over; Seal Beach and Alamitos Heights, 36 degrees and over; Coyote Hills, 23 degrees and over; Richfield, 25 degrees and over; Torrance, 25 degrees and over; Inglewood, 24 degrees and over; Santa Fe Springs, 35 degrees and over; Midway-Sunset, Elk Hills, Buena Vista Hills, 30 degrees and over. Also Associated pays 53 cents for oil of 11 to 13.9 gravity in McKittrick, Kern Front, Kern River, Midway-Sunset, Elk Hills, Buena Vista Hills and Coalinga.

Wildcat in Webb County Tests 100 Feet of Oil; Three Producers Added in Loma Novia Field

SAN ANTONIO, Tex., June 24.—Mills Bennett Production Co.'s No. 1 Lopez, a wildcat 10 miles north of the Bruni Field in Webb County, near the Duval County line, after testing dry gas in sand from 2,121-32 feet last week, cored oil sand from 2,139-44 feet and tested 160 feet of oil. Casing has been cemented on top of the oil sand. The well is in Section 73, Block 1, on a 6,000-acre tract of G. G. Mortimer who gave the company 1,800 acres checkerboarded. The producing sand is the Mirando sand and the test is believed on a trend west of the Government Wells trend and in line with the S. R. C. Pool, several miles northwest of the Government Wells Field in Duval County.

Loma Novia

Three producers were added to the Loma Novia Field in Duval County. Al Buchanan and Blanco Oil Co.'s No. 4 J. O. Trevino cored sand from 2,708-15 feet and was completed for an initial production of 100 bbls. per day. Same company's No. 5 J. O. Trevino, Section 73, cemented casing at 2,673 feet and was completed at a total depth of 2,695 feet for an initial production of 107 bbls. per day through one-quarter inch choke. In Survey No. 72, Stieren Oil Co.'s No. 2 Wright made an initial production of 16 bbls. per hour from a total depth of 2,704 feet. In the south part of the field, offsetting Tex-La Oil Co.'s No. 1 Hubbard, a small producer, Humble Oil & Refining Co.'s No. 1 Hubbard in Section 84, tested 900 feet of oil in 10 minutes on a drill stem test and was being completed at 2,817 feet, probably the largest well in this part of the field. The company's No. 2-C Welder in Section 73 was being completed at a total depth of 2,698 feet.

Loma Alta

Along the same general trend in the Loma Alta Field in southern McMullen County, four tests are ready to spud. Offsetting its discovery on the east, Texio & Illinois Oil Co. is rigged up for No. 2-A Atkinson. Humble Oil & Refining Co. is rigging up No. 1 Atkinson, a west offset in Survey No. 13. Offsetting the discovery to the south, Darby Petroleum Co.'s No. 1-C Hagist in Section 108 has cemented surface casing and Pitkin and Goldson are preparing to spud No. 1 Hagist.

Five miles south of this pool in the Seven Sisters Field, three tests are drilling and two preparing to spud. Southwest of the discovery, Dulce Oil Co. and Henderson and Harvey's No. 1 Serna in Section 384, is drilling below 2,122 feet. Humble Oil & Refining Co. is getting ready to spud No. 1 Bank of Fredericksburg, and has started drilling No. 1 Serna in Survey No. 384. Its No. 1 Temple D. Smith in Section 382 is drilling below 1,850 feet.

San Patricio County

Northeast of the discovery well of the Angelita Field in San Patricio County and the first well drilled in this direction, Continental Oil Co. and others' No. 3 Welder in the Juan Hart and Sons Survey, cored sandy shale from 5,375-77 feet, hard sand with a gas odor from 5,395-96 feet and hard sandy shale with an oil and gas taste from 5,396-5,400 feet and is preparing to make a drill stem test at 5,410 feet. Several tests have been drilled in various directions from the discovery but all have been abandoned as dry.

Live Oak County

Two dry holes were marked up for Live Oak County and another test is reaching contract depth. Four miles northwest of the McNeil Field, Henderson and Coquart's No. 1 Rex in the G.H.&H. Survey, Abstract 197, was abandoned at 5,502 feet. One mile north of the McNeil Field in the M. M. Shipp Survey, J. O. Whittington's No. 1 Little was abandoned at 5,759 feet. Several showings of oil and gas were encountered, but not commercial. Southwest of the town of George West in the Hooper and Wade Survey, Feltner, Lefevre and others' No. 1 Carter Investment Co. is coring below 4,150 feet and is expected to reach contract depth of 4,250 feet by mid-week. It is reported the rig will be moved to a location on the Gem Oil Co. block, same county.

Starr County

Over the line in Starr County an active play centers northwest of the Barbacoas Field, a shallow gas field. A geophysical high is known to exist and several thousand acres have been leased. D. D. Oil Co. is the largest lease holder, while Humble Oil & Refining Co., Magnolia Petroleum Co., Sun Oil Co. and Texas Co. own the rest of the acreage which centers around Porcions 88 and 85.

Hidalgo County

In the Mercedes Field, Hidalgo County, Union Sulphur Co. has staked location for another deep test, No. 4 American Rio Grande Land & Irrigation Co., 400 feet from the north and west lines of Lot 1, Block 99, and 1½ miles south of the discovery which is producing from the Frio sand at 7,477-93 feet. Since the discovery was completed, Union Sulphur Co. has gone back into two old wells abandoned above the pay, deepening them to the producing horizon. Its No. 1 American Rio Grande, abandoned at 6,398 feet, is cutting out drill pipe at 2,200 feet and its No. 2 American Rio Grande is drilling in sidetracked hole below 5,000 feet.

At a recent hearing before the Railroad Commission at Austin, it was brought out by an official of the Union Sulphur Co. that the producing area is expected to cover 13,000 acres, all except 200 acres under lease. The company recommended a 20-acre spacing rule and estimated the cost of a completed well is $75,000.

D. D. Oil Co. and Harrison's No. 2 George, on the extreme eastern side of the Sam Fordyce Field, Hidalgo County, which last week seemed likely to open a deep sand proved a failure when tested. After the Sam Fordyce sand had been cored from 2,711-36 feet it was cored to 2,933 feet in sand that carried some saturation. With 7-inch casing cemented at 2,924 feet, it was washed for one hour and started flowing salt water. It is being carried deeper, and if it fails, will be plugged back and completed in the regular horizon.

Along the Starr-Hidalgo County line centering around the San Ramon grant in Hidalgo County, considerable leasing activity has taken place due to a geophysical high recently found in the area. Texas Co. has 11,000 acres and D. D. Oil Co. has several thousand acres and in addition has an option on the McAllen and Young ranch covering all of the Santa Anita grant. The play extends west and takes in the San Jose grant which is split by the Hidalgo County line. Other companies holding acreage in the area are: Shell Petroleum Corp. with 2,000 acres; Humble Oil & Refining Co., 1,400 acres; Sun Oil Co., 3,000 acres, and Magnolia Petroleum Co. and Union Sulphur Co. owning the other tracts.

Jim Hogg and Goliad

Two wildcat tests in Jim Hogg and Goliad Counties were being watched due to reported showings of oil and gas. Keystone Royalties and Wood and Young's No. 1 Wood, 10 miles south of the town of Goliad in the southwest part of the county, is reported to have shown gas from 5,442-44 feet and is coring below 5,448 feet. It is to be drilled to 6,500 feet and is reported in the Hockleyensis zone, although the top had not been picked. Darby Petroleum Corp.'s No. 1 Holbien, in the northwestern part of Jim Hogg County, in Block 5, Section 57 of the Las Animas grant, 2 miles east of the Henne-Winch-Fariss Pool, is reported to have had a showing of oil from 2,764-72 feet. It is drilling below 2,980 feet.

Wildcat Operations in Southwest Texas

Week Ending June 22

BANDERA COUNTY

Miliam Drlg. Co.'s (Plateau Oil Co.) No. 1 Garrison, G.C.&S.F. Sur. No. 506, 1,500 ft. from W and 2,970 ft. from N lines of survey.
Standing 3,409 ft.; changing contractors and rigs.

Palm Winn Oil Co.'s No. 1 Watson, Sur. No. 71 (workover).
T.D. 1,700 ft.; setting csg.

BASTROP COUNTY

Malone & Owens' No. 1 Spooner, 500 ft. from N line, 3,550 ft. from SW line of Leverenz Sur.
Drlg. 2,175 ft.

BEE COUNTY

John Deering's No. 1 J. A. Pullin, 330 ft. out of SW cor. of Pullin E 80-ac. tract, W. W. Grant Sur.
Spudded.

Dirks' (Bennett & Calloway) No. 1 Miller, 330 ft. from E line, 937 ft. from N line of 6.74-ac. tract, C. Rivas Sur.
Drlg. 4,100 ft.

Dirks Bros. and McMurry's No. 1 Johnson, 1,650 ft. S line, 150 ft. E line of tract, Uranga grant.
Moving in material.

Firm Oil Co.'s No. 1 Copeland, 1,650 ft. from N line, 330 ft. from E line of lease, B. O. Hadley Sur.
Drlg. 1,850 ft.

G. M. Church's No. 1 J. C. Woods, 330 ft. from N line, 330 ft. W of road, J. Ryan Sur., H.&G.N. R.R. Abstract 186.
Moving in material; S.D.

Humble O. & R. Co.'s No. 1 Wood, 466 ft. out of SE cor. of 2,000-ac. tract, Wm. Burke Sur.
Drlg. 2,900 ft.

Humble O. & R. Co.'s No. 2 Thompson, 466 ft. SW of SE cor. of J. C. Wood tract, 466 ft. SW on line parallel to E line, Wm. Burke Sur.
T.D. 5,950 ft.; milling out bit.

F. P. Hynes' No. 2 Plummer, F. J. Chessman Sur. 1, 40 ft. W of No. 1.
Rigging up.

D. V. Smith et al's No. 1 Atkins, M. M. Wood Sur.
Moving in material.

BEXAR COUNTY

Cherokee Drlg. Co.'s No. 1 Chapman, 2,100 ft. from S line, 3,200 ft. from E line, A. J. Leslie Sur.
S.D. 400 ft.

Jas. B. Cunningham's No. 1 L. F. Ridder, 950 ft. S of Nelson Road, 1,300 ft. from E line, Block 5,196, Sur. No. 58.
Sand 485-519 ft.; putting on rotary.

Jones & Kieffer's No. 1 LaGrane, NW cor. of tract, 210 ft. each way, F. Rolen Sur. No. 48.
T.D. 1,610 ft.; T.A.

McPhee & Briggs' No. 1 F. Lamb, 9,200 ft. from S line, 800 ft. from W line of Sur. No. 3 (Manuel de Luna).
Shale 2,135 ft.; whipstocking and sidetracking; no report.

Mid-Texas Prod. Co.'s No. 1 C. G. Walker, cor. of Lot 21, 1¼ miles E of Shadowland.
Rigging up; ready to spud.

Thelma O. & G. Co.'s (Noble & Akins) No. 1 DeVilbiss.
T.D. in Taylor 2,228 ft.; showing oil; trying to complete.

Carroll C. Raborn's No. 1 Claude McCauley, 150 ft. from N and NW lines of tract in Sec. 52, Wm. Harrison Sur.
Sand showing some oil 660 ft.; no report.

C. C. Raborn's No. 1 A. B. Stephens, 1,630 ft. from N line, 1,540 ft. from W line of tract, P. B. Hayes Sur. No. 3.
Moving in rotary; T.D. 400 ft.; shale.

BLANCO COUNTY

H. T. Roe and W. E. Nixon's No. 1 Polk Morrisey, 2,000 ft. from W line, 1,000 ft. out of SE cor., 1,600 ft. from N line of Thomas H. Webb Sur. No. 91.
100 ft.; no report.

CALDWELL COUNTY

Ogden & Reed's No. 1 Mrs. H. Brewer, 1,000 ft. from NE line, 150 ft. from SE line of tract in Martinez Sur.
T.D. 1,745 ft.; set csg.; making test.

DUVAL COUNTY

Benedum & Trees' No. 1 G. B. Parr, 6,600 ft. from N line, 3,960 ft. from W line of tract, San Andres grant.
Spudded.

T. J. & M. Drlg. Co.'s No. 1 Davidson, 2,770 ft. S line, 330 ft. W line of Sur. 90.
S.D. 1,451 ft.

Intrepid Oil Co.'s No. 2 Parr, 330 ft. from N and W lines of 80-ac. tract, Sur. 115.
Temp. S.D. 5,305 ft.; may set csg. on Abd. 2,207 ft.

Magnolia Pet. Co.'s No. 2 Bennett, 887.5 ft. from S line, 664 ft. from E line of Sec. 432, S.K.&K. Sur.
Drlg. 2,860 ft.

J. J. O'Byrne's No. 1 Ball, 330 ft. from S and W lines of Tract 3, Santas Flores grant.
Drlg. 2,850 ft.

FAYETTE COUNTY

Ross Fenton's No. 1 Kasper (281-ac), 2,000 ft. from NE line, 1,250 ft. from SW line, of Thos. Green Sur. No. 28.
Checking titles.

FRIO COUNTY

Midland Oil Co.'s No. 1 Joint Stock Land Bank, 300 ft. from NE and SE lines of 60-ac. tract, B.S.&F. Sur.
Rigging up.

(Continued on Page 68)

ROCKY MOUNTAIN RUNS

Estimated daily average crude oil production for the week ending June 22 follows:

WYOMING	
Salt Creek	17,140
Big Muddy	1,670
Badger Basin	30
Black Mountain	250
Byron	1,210
Dallas Derby	600
Dutton Creek	70
Elk Basin	40
Ferris	30
Frannie	460
Garland	780
Grass Creek	4,270
Greybull	10
Hamilton Dome	1,830
Hudson	250
LaBarge	1,020
Lance Creek	2,450
Lost Soldier	1,450
Mule Creek	Shut in
Midway	70
Notches	Shut in
Oregon Basin	3,000
Osage	750
Pilot Butte	30
Rex Lake	Shut in
Rock River	1,490
South Casper	Shut in
Poison Spider	230
Teapot	20
Waugh Dome	600
Total Wyoming	39,650
MONTANA	
Buckley-Border	250
Cat Creek	760
Cut Bank	5,000
Dry Creek	Shut in
Kevin-Sunburst	3,300
Lake Basin	50
Pondera	980
Total Montana	10,340
COLORADO	
Florence	210
Fort Collins and Wellington	410
Iles Dome	2,760
Moffat	370
Orchard	80
Rangely	70
Tow Creek	170
Total Colorado	4,070
NEW MEXICO	
Artesia	500
Cooper area	5,400
Eunice area	7,640
Hobbs	31,400
Hogback	250
Hospah	Shut in
Jal	4,000
Lea	1,400
Maljamar	1,600
Rattlesnake	640
Table Mesa	90
Total New Mexico	53,000
Total Rocky Mountain region	107,060

WIDER RANGE OF OPERATION

Four-wheel traction enables the FWD to handle its regular hauling job easily and do the tough jobs as a matter of course.

●

The FWD "Takes" the Roads as They Come

It is not necessary to over-speed FWD trucks in order to make better trip-time . . . Equal distribution of load and power to the four wheels gives the FWD the ability to go around curves, climb hills, travel over slippery pavements and hazardous highways at high speed with the sure-footedness of a Bengal Tiger . . . The four wheels grip the road and keep the truck traveling safely at a pace that sets the standard of modern transportation.

Naturally FWD superior traction makes it easier to accelerate and decelerate more quickly than the average truck.

●

These are some of the reasons why the FWD has earned the reputation of being the "high-speed safety truck." There are other reasons. Write for them!

4 MORE ADVANTAGES

Greater Safety. Front axles are set back. *Power*, as well as load on all four wheels, gives the FWD sure footing on slippery pavements, in congested traffic, and when going around curves.

Greater Dependability of Service. Reserve power, rugged construction throughout, and true application of the four-wheel drive principle, insure continuous operation under any condition. Backed by a nation-wide organization of parts depots and service men available at a moment's notice.

Faster Service. FWDs, with their powerful engines, wide range of gear ratios and four-wheel traction cut down trip-time by being able to "make" the hills, curves, and poor going, faster than average trucks. No necessity for over-speeding on the straight stretches.

Operating Economy. Definite savings are made in gasoline, tire wear, maintenance cost, and other "out-of-pocket" expenses. This is the result of equal distribution of power and load and scientific four-wheel drive construction throughout.

FWD TRUCKS

THE FOUR WHEEL DRIVE AUTO COMPANY
Clintonville, Wisconsin
Canadian Factory: Kitchener, Ontario

☐ The Snow Removal Problem ☐ Use of Extreme Pressure Lubricants ☐ Truck and Trailer Size and Weight Restrictions ☐ Effects of Front Wheel Stability on Public Safety ☐ Purdue University Efficiency Test ☐ Cutting Costs with the FWD Road Maintainer ☐ Making the Most of Controlled Power.

Mr. _____ Title _____
Address _____
City _____ State _____

BACKED BY AN INTERNATIONAL SERVICE SYSTEM

Reagan County May Get Third Producing Area; Keystone Ranch, Winkler, Yields Little Oil

By L. E. BREDBERG
Fort Worth Bureau, The Oil and Gas Journal

FORT WORTH, Tex., June 24.—Reagan County, second producing county in West Texas, is apparently to get a third producing area. Dobbs Oil Co., Dallas, headed by W. J. Dobbs, has a test in Block 3, William Allen Survey, about 5½ miles due south of Big Lake, with estimated daily potential 250 bbls. of 31.9 gravity oil, producing from the Permian lime section correlating with the pay horizon in the Big Lake Field, about 15 miles west.

The test was carried to a total depth of 2,465 feet but was plugged back 10 feet to shut off water and prevent shooting or acidizing into water again. Acid did not prove successful so it was shot with 340 quarts from 2,325-95 feet. It sprayed and flowed above the derrick for about 15 minutes, then bridged. While cleaning out it blew out again. It was bailed for three hours, but the fluid level could not be lowered after it had filled to 900 feet within a short time. The hole is now half full of oil which is increasing and the operator has ordered it cleaned out for two or three more days, and ordered tanks.

The well is on acreage obtained by John Maddox of San Angelo from the Empire Gas & Fuel Co., which owned a 3,300-acre block. Dobbs has 1,000 acres around the test and Maddox holds around 400 acres, with Empire, Sun and Pure Oil companies holding nearby and offset acreage. Empire holds the section to the west and south and will probably make location as soon as this well shows for a good commercial producer. Elevation is 2,669 ft.

Stanley Jay, formerly West Texas geologist for the Pure Oil Co., checked the geology for Dobbs Oil Co. A dry hole was drilled several years ago in the NW cor. of Section 30, about 3 miles northwest of the Dobbs discovery, and Anderson and Marland Oil Co. drilled a dry hole in the SW cor. of Section 2, Block 50, about 4 miles southeast. The former test went to 2,826 feet and the latter to 2,631 feet. Henshaw abandoned one in Section 14, Block 48, about 6 miles east, at a total depth of 2,558 feet. No other close-in tests have been drilled although many tests dot the surveys in every direction. There is room for a good size field. Humble Pipe Line Co.'s main line from Kemper Station, east to San Angelo to the Gulf Coast, passes within a few miles.

The Dobbs area may be given an Ordovician test in the future. Permian lime production in the Big Lake Field is from 2,900 to 3,100 feet and Ordovician production is from 8,200 to 8,500 feet. The Dobbs well is running about 500 feet higher on the Permian lime than the Big Lake producers. Lime was topped in the Dobbs well at 2,285 feet. W. C. (Bill) Gruber, drilling contractor of San Angelo, has the drilling contract.

Andrews County

Amon G. Carter of Fort Worth has staked a wildcat location in the extreme northwest corner of Andrews County, in the C NE ¼ Section 13, Block A-30, on the Richards and McWhorter lands, approximately 2½ miles due north of Gulf Production Co.'s new location in Section 2, Block A-38, on the Kelley lands. Rig is up on both locations.

Humble Oil & Refining Co. has staked a location in the Means Pool, in the northeastern part of the county, in the SW cor. of Section 4, Block C-45.

Honolulu Oil Co. and Llano Oil Co. apparently have their second well in the making about 5 miles southeast of the Deep Rock Pool. This test, No. 1-B Parker, in Section 11, Block A-42, is about one-half mile southwest of their discovery. It is showing oil at 4,555 feet with an increase at 4,627 and 4,635 feet. It is drilling at 4,650 feet. Elevation is 3,281 feet. The Parker discovery of the companies in Section 7, Block A-44, was drilled to 4,780 feet and plugged back to 4,731 feet before completing for a 153-bbl. per day well on the pump, so this second test has at least another 100 feet to go.

Ector County

Landreth Production Co.'s No. 1-B Holt, in Section 19, Block A, P.S.L. Survey, was completed extending production northeast in the Cowden Field. It made 120 bbls. initial production per day at a total depth of 4,323 feet after topping the pay at 4,274 feet. It was shot with 20 quarts from 4,269-4,317 feet.

Sun Oil Co. extended the Cowden area south, closing a gap between producers southeast and north. Same is located in Section 2, Block 43, Township 1s, T.&P. Survey. It made an initial production of 257 bbls. per day from pay topped at 4,245 feet. Total depth is 4,280 feet. It was shot with 155 quarts from 4,200-80 feet.

Landreth Production Co.'s No. 1 Cowden heirs, in Section 18, Block 44, Township 1n, T.&P. Survey, about midway between the company's wildcat producer and Davidson's No. 1 Cummins, in the extreme northeast corner of Ector County, has proven a duster at a total depth of 4,470 feet.

Crane County

Gulf Production Co.'s No. 1 McKnight wildcat in Section 9, Block B-21, 4 miles north of the lone producer on the Tubbs ranch, discovered 4½ years ago by Cranfill Brothers and Gulf Production Co., is appearing as an extension on the west edge of Crane County. It is drilling at 3,610 feet with 800 feet of oil in the hole, carrying about 2½ bbls. of water per hour from above the last oil increase at 2,560-75 feet. The company has a large block and is preparing to drill an Ordovician test. Large special rig has been moved in from Mexico.

Deepest Test in World

Gulf Production Co.'s No. 103 McElroy, in Section 197, Block F, on the extreme west edge of Upton County, in the Permian lime producing pool on the McElroy ranch, is swabbing after plugging back from record depth of 12,786 feet to 9,977 feet. It was acidized with 3,000 gallons, but tested only water from 9,080-4,150 feet. The more recent test has been made through perforated casing from 8,130-50 feet. It swabbed to 7,800 feet and recovered 9 bbls. of oil and 5 bbls. of water. It later swabbed 20 bbls. of oil and 48 bbls. of water. The oil tested 39.5 gravity. It will have to make a better showing to prevent further plugging back and testing. If it does not make a deep producer in the Pennsylvanian it is to be plugged back to the Permian lime, the regular producing horizon.

Pecos County

In the White and Baker area, about 9 miles west of the Yates Field, Pecos County, where Gulf Production Co. brought in a small shallow discovery several months ago, but which has seen drilling of four dry holes since, Cardinal Oil Co. has completed an 11,000,000-foot gasser at a total depth of 1,784 feet after plugging back 6 feet. The gas is coming from 1,542 feet. Elevation of the well, which is in Section 40, Block 194, G.C. &S.F. Survey, is 2,713 feet. It is south of the discovery. Gulf Production Co. is drilling No. 6 in Section 94, same block and survey, southwest of the gas well.

Jones, Reagan, and Scurry Counties each registered dry holes, Jones County getting two this week.

Coffield and Guthrie have staked location for No. 1 Wade, in Section 115, Block 97, H.&T.C. Survey, Scurry County, a diagonal offset to No. 1 Murphy, which has been pumping a small quantity of oil for five years. The area is about 17 miles southwest of Snyder.

Texas-Canadian Oil Corp. is blocking acreage for a test 4 miles west of the Murphy producer, in Section 110.

Winkler County

The Winkler County situation, especially in the Keystone ranch area, looks none too favorable at this writing. Tests on the Keystone ranch, and Richardson's test on the Walton ranch, have been getting plenty of gas, have been coring oil saturated sandy lime with good showings of oil, but when tested yield but little oil. Gulf Production Co.'s No. 1 Keystone, in Section 10, Block B-3, one of the nine wildcats the company is drilling on as many sections, struck an increase in gas from 2,990-3,000 feet, and more gas at 3,029-35 feet. It had an estimated 1,000,000 feet at this depth. It is drilling at 3,050 feet in lime. The company's No. 2 Keystone, in Section 17, made drill stem test from 3,295-3,328 feet, but tested dry. Total depth is 3,375 feet and it is reaming the hole.

Richardson's No. 1 Walton in Section 1, Block B-3, which first drew attention to the area northeast of Kermit in Winkler County, is coring in lime. It had saturated core from 3,040-42 feet and 3,042-48 feet. It formerly made 20,000,000 feet of gas at 2,945 feet.

Sun Oil Co.'s No. 1 Halley, in Section 24, Block B-12, 1½ miles northwest of the Halley discovery in southern Winkler County, plugged back to 2,750 feet from total depth of 3,173 feet where it had a hole full of water. It previously tested 14 bbls. of oil and 17 bbls. of water in 24 hours.

There were only seven locations staked in the district this week and 14 completed. Several wildcat locations were staked and several wildcats proved dry.

A test is reported contemplated for the SE¼ of Section 28, Block 33, Township

(Continued on Page 66)

Wildcat Operations in West Texas

Week Ended June 22

ANDREWS COUNTY

Amon G. Carter's No. 1 Richard & McWhorter, C NE ¼ Sec. 13, Blk. A-30, 6 miles SE of NW cor. of county.
Rig.

Fuhrman Pet. Corp.'s No. 2 Ford, 440 ft. from S and 1,320 ft. from E, Sec. 16, Blk. A-43.
T.D. 4,012 ft.; pulling big pipe.

Gulf Prod. Co.'s No. 1 J. S. Kelly, 1,320 ft. from S and E, Sec. 2, Blk. A-38.
Derrick.

Honolulu & Llano Oil Co.'s No. 1-B Parker, 440 ft. from N and 1,650 ft. from E, Sec. 11, Blk. A-42.
Elev. 3,281 ft.; show oil 4,555 ft.; increase at 4,627 ft. and 4,636 ft.; drlg. 4,650 ft.

Humble Oil & Ref. Co.'s No. 5 Means, 654 ft. from S and 677 ft. from W, Sec. 4, Blk. C-45, P.S.L. Sur.
Cellar.

Humble Oil & Ref. Co.'s No. 4 Means, 1,982 ft. from N and 660 ft. from E, Sec. 12, Blk. A-35.
Rigged up.

Humble Oil & Ref. Co.'s No. 4 Means, 654 ft. from S and 1,997 ft. from W, Sec. 4, Blk. C-45.
Elev. 3,185 ft.; drlg. 4,112 ft.

Republic Prod. Co.'s No. 1 Boner-State, 2,200 ft. from S and 1,320 ft. from E, Sec. 25, Blk. A-43.
Drlg. 3,937 ft.

L. G. Stogner et al's No. 1 Mrs. C. George, 660 ft. from S and E, Sec. 25, Blk. A-32, P.S.L. Sur.
Cable tools.

J. W. Trippiehorn's No. 1 Ogden, 330 ft. from S and 2,310 ft. from W lines of Sec. 6, Blk. A-46, P.S.L. Sur.
Elev. 3,211 ft.; drlg. 2,122 ft.

Wahlenmaier et al's No. 1 Odessa Ranch Co., 1,320 ft. from N and E of Sec. 10, Blk. A-32, P.S.L. Sur.
Elev. 3,307 ft.; drlg. 4,100 ft.

Wahlenmaier et al's No. 1 Cox Estate, 1,320 ft. from N and W of Sec. 8, Blk. A-32.
Drlg. 150 ft.

BREWSTER COUNTY

F. C. Dodson's No. 1 Texas American Syndicate, 660 ft. from N and E, Sec. 66, Blk. 10, G.H.&S.A. Sur.
Elev. 4,226 ft.; S.D. 950 ft.; rigged up rotary.

Joiner et al's No. 1 McIntyre, 353 ft. from S. 2,390 ft. from E of Sec. 21, Blk. 352, W. M. Mitchell Sur.
S.D. 2,150 ft.

King & Franklin's No. 1 Gage Est., C Sec. 138, Blk. 22, G.H.&S.A. Sur.
Elev. 4,244 ft.; S.D. 1,185 ft.

O. H. Storey's No. 1 Wilson, 1,980 ft. from N and E lines of Sec. 2, Blk. 212, T.&St.L. Sur.
Elev. 3,669 ft.; S.D. 1,550 ft.

S. G. Smith's No. 1 Decie, 2,490 ft. from S and E, Sec. 7, Blk. 1.
Elev. 4,271 ft.; T.D. 1,100 ft.; pulling csg.

COCHRAN COUNTY

Kelsey's No. 1 Slaughter, C Labour 36, League 150, R.C.S. Lands.
Derrick.

West Texas Development Co.'s No. 1 Slaughter, near C of Labour 53, League 149, Randall Co. School Lands.
Drlg. 55 ft.

COKE COUNTY

Haggerty et al's No. 1 Gaston, 340 ft. from S and 654 ft. from W, Sec. 11, Jos. Young Sur.
Drlg. 3,127 ft.

CRANE COUNTY

American Liberty Oil Co.'s No. 1 Tubbs, 796 ft. from S and 330 ft. from W, Sec. 11, Blk B-27, P.S.L. Sur.
Elev. 2,536 ft.; drlg. 2,465 ft.

Dobbs Oil Co.'s No. 1 J. Cowden et al, 330 ft. from S and E of N half, Sec. 36, Blk. 1, H.&T.C. Sur.
Drlg. 175 ft.

Gulf Prod. Co.'s No. 10 Waddell, C NW ¼ Sec. 11, Blk. B-23.
Drlg. 1,763 ft.

Gulf Prod. Co.'s No. 1 Henderson, 1,313 ft. from S and 1,322 ft. from E, Sec. 3, Blk. B-23, P.S.L. Sur.
Elev. 2,778 ft.; drlg. 3,330 ft.

Gulf Prod. Co.'s No. 1 M. B. McKnight, 660 ft. from S and W, Sec. 9, Blk. B-21.
Elev. 2,679 ft.; drlg. 3,610 ft.; 800 ft. oil in hole.

Gulf Prod. Co.'s No. 1 Waddell, C NW NW Sec. 4, Blk. B-27, P.S.L. Sur.
S.D. 4,595 ft.; rigging up rotary.

H. L. Holloway's No. 1 Mayberry, 2,440 ft. from SW and SE, Sec. 17, Blk. 35, H.& T.C. Sur.
S.D. 570 ft.

Magnolia Pet. Co.'s No. 1 Edwards, 330 ft. from S and 1,650 ft. from E, Sec. 2, Blk. B-23.
Elev. 2,778 ft.; S.D. 2,148 ft.

CROCKETT COUNTY

Adkins Bros.' No. 1 Shannon, 320 ft. from S and 630 ft. from W of 80 in SW ¼ Sec. 27, Blk. WX, G.C.&S.F. Sur.
Machine.

Leslie-Hiller et al's No. 1 Todd, 1,200 ft. N and 320 ft. E, Sec. 36, Blk. WX, G.C.& S.F. Sur.
Fishing 715 ft.

Humble Oil & Ref. Co.'s No. 1 Couch, C NW Sec. 3, Blk. QR, G.C.&S.F. Sur.
Temporarily abnd. 1,881 ft.; elev. 2,538 ft.

CULBERSON COUNTY

Anderson-Prichard Oil Corp., Magnolia Pet. Co. et al's No. 1 Borders, 1,255 ft. N and 2,305 ft. from W, Sec. 34, Blk. 69, P.S.L. Sur.
T.D. 1,708 ft.; P.B. to 1,675 ft. to straighten hole.

Miller Bros.' No. 1 fee, 1,980 ft. from N and

(Continued on Page 67)

Wildcat Failures Feature in East Central Texas; Continued Activity in the East Texas Field

By L. E. BREDBERG

DALLAS, Tex., June 24.—Apparently a crop of wildcat failures is again in store for the East Texas and East Central Texas district. Two wildcats were ordered abandoned this week without testing and another test is at a critical depth without showing anything more than a gas odor in some hard sand and sandy shale.

Atlatl Royalty Corp.'s No. 1 J. B. Goldsmith, in the W. W. Lanier Survey, 3½ miles northwest of Quitman, in Wood County, cored salt water sand from 4,455-70 feet after topping the Woodbine section at 4,447 feet and is drilling at 4,485 feet. It is to go to the Georgetown lime.

Scott and Turpin's No. 1 Whiteman and Decker, in the J. H. Armstrong Survey, about 3 miles southeast of the nearest producer in the Rusk Pool, Cherokee County, has been ordered abandoned at 5,383 feet without testing. It drilled into salt water sand before plugging orders were issued.

Wood and Young's No. 4 New Birmingham Development Co., just northeast of the Rusk Pool discovery, Cherokee County, cored some saturated sand to total depth of 5,178 feet and set and cemented 7-inch casing at 5,158 feet. Plug is being drilled and within a few days it should be completed. It will no doubt make the third producer in the pool. No. 5 test is being drilled north of No. 4 by the same operators and Shell Petroleum Corp. is drilling a diagonal southeast offset to the latest producer, No. 3.

Cayuga Area—Anderson County

Tide Water Oil Co. and Texas Seaboard Oil Co. are drilling below 8,650 feet in No. 21-A Wills, Trinity sand test in the S. Edmondson Survey, Cayuga Field, northwest Anderson County. This is the only Trinity sand test now drilling in the district, and the deepest ever drilled there.

Roeser & Pendleton, Inc., of Fort Worth, extended the Cayuga Field about 7,000 feet west when No. 1 Ware and Wilson, in the southeast corner of a 460-acre lease in the E. Ritter Survey, gauged 10 bbls. of oil per hour through one-half inch tubing choke. Total depth is 4,088 feet. It adds considerable acreage to the field which has been gaining in importance since being extended over 2 miles northwest six weeks ago, in which area other producers have been completed and other tests are now drilling. The field is the most active in the district outside of the East Texas Field.

Leon County

Killough and Tucker's No. 1 G. W. Lee, in the J. Burleson Survey, Leon County, north of Shell and others' gasser on the Lee farm, cored from 5,555-60 feet and from 5,565-70 feet. The last three feet showed hard sand and sandy shale carrying an odor of gas. It is coring. Shell Petroleum Corp. and others' No. 1 Lee was drilled to total depth of 6,040 feet, but was plugged back to 5,660 feet to complete as a gas well. The Killough and Tucker test still has plenty of chances of making at least a gas well.

Morrow and others' No. 1 Watkins, in the H. Y. Bailey Survey, 3 miles south of Caro, in Nacogdoches County, has been abandoned at a total depth of 4,170 feet. Another abandonment was Cauble and Thompson's No. 1 Y. B. Reed, in the F. Thweatt Survey, Hunt County. Total depth is 800 feet.

Hunt Production Co. and Sun Oil Co.'s No. 1 E. W. Judge, Marshall University Survey, 3 miles south of Tyler, in Smith County, cored from 5,150-65 feet and recovered 10 feet of porous grained salt water sand. It cored to 5,172 feet and was ordered abandoned without testing. This is the second test the companies have drilled. The former test also was dry.

Douglas Exploration Co.'s No. 1 Hayter is to be abandoned at total depth of 5,060 feet, in the Santos Coy Survey, northwest of Nacogdoches in Nacogdoches County.

Gulf Production Co. has staked two more locations in its Camp Hill Pool, 7 miles southeast of Palestine in Anderson County, but footage has not been announced. The company completed two wells in this pool last week, one in the Sub-Clarksville and one in the Woodbine sand. The Woodbine sand was the third pay horizon to yield oil or gas in the field. The company has one shallow gasser producing from the Carrizo sand, three oil producers in the Sub-Clarksville and one Woodbine sand producer.

EAST TEXAS FIELD

There were 137 locations staked in the East Texas Field this week and 109 wells completed, of which seven were completed swabbing, four proved pumpers and one was junked and abandoned. Two of the pumpers were on the east edge, in the extension area, Gregg County. The remainder of the pumpers and all the swabbers were in Rusk and Upshur Counties.

EAST TEXAS COMPLETIONS

Gregg County

Arkansas Fuel Oil Co.'s No. 6-C McKinley, top pay 3,588 feet, total depth 3,612 feet, initial production 29 bbls. in 15 minutes. Atlantic Oil Producing Co.'s No. 32-B Burnside, top pay 3,474 feet, total depth 3,523 feet, initial production 135 bbls. per hour; No. 33-B Burnside, top pay 3,469 feet, total depth 3,525 feet, initial production 134 bbls. per hour. C. & G. Oil Co.'s No. 16 Harris, top pay 3,518 feet, total depth 3,539 feet, initial production 30 bbls. in 15 minutes. F.H.E. Oil Co.'s No. 10 Flemister, top pay 3,595 feet, total depth 3,636 feet, initial production 30 bbls in 30 minutes. Hanbury's No. 1-C Gage, top pay 3,620 feet, total depth 3,628 feet, initial production 15 bbls. in 30 minutes.

Humble Oil & Refining Co.'s No. 37 Hughes, top pay 3,649 feet, total depth 3,669 feet, initial production 70 bbls. per hour; No. 13-A Johnson, top pay 3,555 feet, total depth 3,581 feet, initial production 80 bbls. per hour. Imperial Petroleum Co.'s No. 4 Shoults, top pay 3,669 feet, total depth 3,691 feet, initial production 80 bbls. per hour. Iowa-Payne Oil Co.'s No. 4 Isley, top pay 3,550 feet, total depth 3,600 feet, initial production 100 bbls. per hour. Kewanee Oil & Gas Co.'s No. 22 fee, top pay 3,532 feet, total depth 3,576 feet, initial production 90 bbls. per hour. Magnolia Petroleum Co.'s No. 8 Fisher, top pay 3,463 feet, total depth 3,487 feet, initial production 60 bbls. per hour. Marine Oil Corp.'s No. 5 Richey, top pay 3,533 feet, total depth 3,543 feet, initial production 31 bbls. in 12 minutes. Midfield Oil Co.'s No. 6 Rodden, top pay 3,640 feet, total depth 3,641 feet, initial production 20 bbls. in 20 minutes.

Nathan Oil Co.'s No. 3 Rodden, top pay 3,604, total depth 3,607 feet, initial production 65 bbls. per hour. Port Bolivar Oil Co.'s No. 1-A Mackey, top pay 3,641 feet, total depth 3,655 feet, initial production 57 bbls. in four hours, pumping. Schroeder's No. 8 Bumpas, top pay 3,516 feet, total depth 3,595 feet, initial production 62 bbls. in 30 minutes. Selby Oil & Gas Co.'s No. 23-A Snavely, top pay 3,567 feet, total depth 3,582 feet, initial production 42 bbls. in 30 minutes. Shell Petroleum Corp.'s No. 22 King, top pay 3,522 feet, total depth 3,597 feet, initial production 60 bbls. per hour; No. 16 Slaton, top pay 3,582 feet, total depth 3,662 feet, initial production 60 bbls. per hour. Sinclair Prairie Oil Co.'s No. 16 Williams, top pay 3,498 feet, total depth 3,520 feet, initial production 75 bbls. per hour. Snowden-McSweeney's No. 11 Bonner, top pay 3,574 feet, total depth 3,590 feet, initial production 45 bbls. per hour.

Sutton and Hawkins' No. 12 Whittaker, top pay 3,508 feet, total depth 3,521 feet, initial production 80 bbls. per hour. Trentman Oil Co.'s No. 2 Christian, top pay 3,624 feet, total depth 3,632 feet, initial production 30 bbls. in 20 minutes. Yount Lee Oil Co.'s No. 9-A Fenton, top pay 3,586 feet, total depth 3,606 feet, initial production 55 bbls. per hour through eleven-sixteenths inch choke; No. 9-C Lathrop, top pay 3,611 feet, total depth 3,631 feet, initial production 50 bbls. per hour through eleven-sixteenths inch choke. Atlantic Oil Producing Co.'s No. 14-A Hughey, top pay 3,625 feet, total depth 3,661 feet, initial production 110 bbls. per hour; No. 15-A Hughey, top pay 3,550 feet, total depth 3,580 feet, initial production 100 bbls. per hour. Burnham & Johnson's No. 2 Dansby, top pay 3,744 feet, total depth 3,745 feet, initial production 25 bbls. in 40 minutes.

Dyck Oil Co.'s No. 5 Blackman, top pay 3,658 feet, total depth 3,660 feet, initial production 75 bbls. per hour. Sugar's No. 1 Dickson, top pay 3,545 feet, total depth 3,576 feet, initial production 10 bbls. per hour, pumping. Gralenor Oil Co.'s No. 5 King, top pay 3,681 feet, total depth 3,683 feet, initial production 100 bbls. per hour. Gulf Production Co.'s No. 9 Davis, top pay 3,574 feet, total depth 3,583 feet, initial production 74 bbls. per hour; No. 88 Hilburn, top pay 3,528 feet, total depth 3,558 feet, initial production 80 bbls. per hour; No. 25 Muckleroy, top pay 3,592 feet, total depth 3,606 feet, initial production 75 bbls. per hour.

Parks' No. 2 Smith, top pay 3,536 feet, total depth 3,560 feet, initial production 60 bbls. per hour. Sells Petroleum Co.'s No. 5 Williams, top pay 3,581 feet, total depth 3,584 feet, initial production 85 bbls. per hour. Halliburton's No. 10 Long, top pay 3,650 feet, total depth 3,657 feet, initial production 90 bbls. per hour. Stroube & Stroube's No. 5 Beall, top pay 3,542 feet, total depth 3,570 feet, initial production 25 bbls. per hour. Sun Oil Co.'s No. 20 Beall, top pay 3,621 feet, total depth 3,636 feet, initial production 64 bbls. per hour. Tide Water Oil Co.'s No. 16 Blackman, top pay 3,650 feet, total depth 3,654 feet, initial production 75 bbls. per hour.

Rusk County

Bay Oil Co.'s No. 12 Moore, top pay 3,725 feet, total depth 3,732 feet, initial production 72 bbls. per hour. Clarkson & Tallah's No. 1 Jones, top pay 3,633 feet, total depth 3,675 feet, initial production 20 bbls. per hour. Constantine's No. 1 Tucker, top pay 3,660 feet, total depth 3,661 feet, initial production 50

East Central Texas Wildcats

Week Ending June 22

CAMP HILL AREA—ANDERSON COUNTY

Hunt and Sun Oil Co.'s No. 2 Alice Scott, 30 ft. N of No. 1, James Crawford Sur. S.D. 1,153 ft.

J. W. Luttes' No. 1 C. McKee, 2,640 ft. from N line of lease and survey and 330 ft. from W line of McKey 800-ac. tract. Elev. 391 ft.; S.D. 4,516 ft.; base Pecan 4,390 ft.

CAYUGA AREA—ANDERSON COUNTY

Tide Water Oil Co. et al's No. 21-A Wells, 4,079 ft. N and 2,333 ft. W of lease, S. Edmondson Sur. (Trinity test). Drlg. 8,600 ft.

LONG LAKE AREA—ANDERSON COUNTY

Tide Water Oil Co. et al's No. 1 Shaw and Kern, 1,400 ft. from S and 2,333 ft. from E line, in D. Parker Sur. Drlg. 4,325 ft.

BOWIE COUNTY

Tex-Ark. Oil Co.'s No. 1 Hamilton Estate, 600 ft. E and 350 ft. N lines, J. Milan Sur., 4 miles S of Red River. S.D. 1,121 ft.

CHEROKEE COUNTY

H. A. Baker et al's No. 1 T. Smith, 630 ft. S and 660 ft. W of SW cor. of W. A. Newton's 160-ac. tract, 2½ miles N of Jacksonville. J. Pineda Sur. Top Pecan 3,520 ft.; S.D. 3,740 ft.

Jacksonville G. & G. Co.'s No. 1 H. D. Henderson, 660 ft. from N and W lines of 40-ac. tract out of Tankersley 104-ac. tract, 5 miles NE of Jacksonville, J. Pineda Sur. Drlg. 693 ft.

O'Connor and St. Germaine Oil Co.'s No. 1 Long, 150 ft. S and 450 ft. E, G. S. Long Sur., 2 miles S of Mount Selman. S.D. 80 ft.

Scott & Turpin's No. 1 Whiteman & Decker, 450 ft. N and 150 ft. W, J. H. Armstrong Sur. Elev. 546 ft.; coring 5,310 ft.; top Austin 5,063 ft.

Shell Pet. Corp.'s No. 1 New Birmingham Dev. Co., 190 ft. S and 150 ft. E from SE cor. T. J. Wood 160-ac. lease Levi Jordan Sur. Material.

S. Thompson's No. 1 G. H. Allen, 330 ft. out of SW cor. 150-ac. tract, Wm. King Sur., 3 miles S of Hughes Spring. Location.

Wilson Stubbs Oil Co.'s No. 1 Rowborts, 450 ft. from S line, 150 ft. from W line of 100-ac. tract, 2 miles SW of Jacksonville, J. D. Wolfin Sur. S.D. 1,552 ft.

Wood et al's No. 4 New Birmingham Dev. Co., 750 ft. S and 150 ft. E line, 600 ft. N of No. 3. Coring 5,180 ft.; Austin 4,940 ft.

FANNIN COUNTY

B. F. Allen's No. 1-B Argo, center of 16½-ac. tract in J. G. Swisher Sur., 1 mile S of Ector. Drlg. 100 ft.

Warner Moore et al's No. 1 Hancock, 400 ft. from W and 150 ft. N lines, Sec. 16, L. M. Baldock Sur., ½ mile S of Trenton. S.D. 170 ft.

FRANKLIN COUNTY

Ferrell et al's No. 1 G. K. Ayers, C. H. Simms Sur., 900 ft. from N line and 5,300 ft. from W line of survey, 6 mi. NE of Winnsboro on 50-ac. tract. Rigging up.

FREESTONE COUNTY

Hoover et al's No. 1 McFall, 150 ft. S and W lines, S. Garrison Sur., E of Mexia. Location.

J. E. Milburn's No. 1 S. E. McShan, 4,000 ft. NW and 5,000 ft. NE of tract, 3 miles SE of Donie, G. Diaz Sur. S.D. 270 ft.

GREGG COUNTY

O. T. Clark's No. 1 Williams, 2,100 ft. from S and 2,400 ft. from W of D. Hill Sur., 3 miles NE of Longview. S.D. 2,771 ft.

L. P. Kean's No. 1 S. M. Smith, 1,000 ft. E and 1,250 ft. S of W. W. Avery Sur., 4 miles SE of Gladewater. Location.

HENDERSON COUNTY

Great State's No. 1 Ansley, 1,734 ft. W and 300 ft. S of SE cor. of M. Matthews Sur., N. H. T. Thompson Sur. S.D. 3,315 ft.

C. D. Neff et al's No. 1 H. G. Small, 450 ft. from W and 375 ft. from E lines, I. Greeson Sur., SW of Crossroads. S.D. 534 ft.

H. M. Wilson's No. 1 fee, 970 varas S of NE cor. of 943-ac. tract, 5 miles N of Malahoff. Derrick.

HOPKINS COUNTY

D. A. Hale et al's No. 1 L. M. Hall, 200

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bbls. per hour. Cordova-Union Oil Co.'s No. 4-D Christian, top pay 3,635 feet, total depth 3,661 feet, initial production 75 bbls. per hour.

Gulf Production Co.'s No. 11 Christian, top pay 3,704 feet, total depth 3,719 feet, initial production 67 bbls. per hour through three-quarter inch choke; No. 28-C Christian, top pay 3,654 feet, total depth 3,663 feet, initial production 65 bbls. per hour through three-quarter inch choke. Humble Oil & Refining Co.'s No. 163 Crim, top pay 3,648 feet, total depth 3,706 feet, initial production 87 bbls. per hour; No. 164 Crim, top pay 3,665 feet, total depth 3,698 feet, initial production 80 bbls. per hour; No. 36-A Laird, top pay 3,617 feet, total depth 3,674 feet, initial production 63 bbls. per hour; No. 15-A Sexton, top pay 3,606 feet, total depth 3,695 feet, initial production 44 bbls. per hour.

Jones & Shelburn's No. 2 Leath, top pay 3,484 feet, total depth 3,497 feet, initial production 20 bbls. in three hours, swabbing. Navarro Oil Co.'s No. 11 Peterson, top pay 3,680 feet, total depth 3,715 feet, initial production 100 bbls. per hour. Roger's No. 6 Sexton, top pay 3,630 feet, total depth 3,673 feet, initial production 25 bbls. per hour. Shell Petroleum Corp.'s No. 24 Russell, top pay 3,578 feet, total depth 3,642 feet, initial production 41 bbls. in 30 minutes. Tide Water Oil Co.'s No. 11 Bean, top pay 3,551 feet, total depth 3,598 feet, initial production 10 bbls. in 10 minutes through 1-inch choke. Amerada Petroleum Corp.'s No. 23 Stovall, top pay 3,620 feet, total depth 3,649 feet, initial production 13 bbls. in 20 minutes.

Apple's No. 2 Kangerga, top pay 3,540 feet, total depth 3,690 feet, initial production 18 bbls. per hour, swabbing. Atlantic Oil Producing Co.'s No. 38 Kenney, top pay 3,566 feet, total depth 3,630 feet, initial production 62 bbls. per hour. British-American Oil Co.'s No. 10 Kangerga, top pay 3,615 feet, total depth 3,635 feet, initial production 30 bbls. in 15 minutes. Bryant's No. 1 Worrell, top pay 3,520 feet, total depth 3,586 feet, initial production 20 bbls. per hour, swabbing. Crabtree & Jeffries' No. 8 Giles, top pay 3,700 feet, total depth 3,740 feet, initial production 60 bbls. per hour. Despot's No. 2 Deason, top pay 3,582 feet, total depth 3,652 feet, initial production 32 bbls. per hour. Fox & Butler's No. 6 Thrash, top pay 3,665 feet, total depth 3,734 feet, initial production 100 bbls. per hour. Gulf Production Co.'s No. 6 Johnson, top pay 3,760 feet, total depth 3,762 feet, initial production 25 bbls. per hour through three-quarter inch choke.

Humble Oil & Refining Co.'s No. 9 Arnold, top pay 3,747 feet, total depth 3,797 feet, initial production 60 bbls. per hour; No. 42 Blackwell, top pay 3,625 feet; total depth 3,640 feet, initial production 31 bbls. in 30 minutes; No. 15 Glover, top pay 3,712 feet, total depth 3,780 feet, initial production 35 bbls. per hour; No. 7 Holt, top pay 3,768 feet, total depth 3,811 feet, initial production 65 bbls. per hour; No. 49-A Kangerga, top pay 3,612 feet, total depth 3,637 feet, initial production 77 bbls. per hour; No. 9 Wooster, top pay 3,680 feet, total depth 3,742 feet, initial production 61 bbls. per hour. Hunt Production Co.'s No. 3 Alford, top pay 3,575 feet, total depth 3,670 feet, initial production 20 bbls. per hour, pumping. Magnolia Petroleum Co.'s No. 3 Spence, top pay 3,667 feet, total depth 3,686 feet, initial production 5,000,000 feet of gas.

Marathon Oil Co.'s No. 74 Cross, top pay 3,600 feet, total depth 3,624 feet, initial production 48 bbls. per hour. Nathan Supply Co.'s No. 1 Hale, top pay 3,523 feet, total depth 3,546 feet, initial production 35 bbls. per hour. Octo Oil Co.'s No. 5-A Tipps, top pay 3,557 feet, total depth 3,572 feet, initial production 10 bbls. per hour, swabbing; No. 7-A Tipps, top pay 3,536 feet, total depth 3,572 feet, initial production 16 bbls. in two hours, swabbing. Overton Refining Co.'s No. 3 Maxwell, top pay 3,758 feet, total depth 3,800 feet, initial production 75 bbls. per hour. Bison Refining Co.'s No. 1 Dorsey, top pay 3,630 feet, total depth 3,681 feet, initial production 7 bbls. per hour, swabbing. Ray's No. 9 Pinkston, top pay 3,610 feet, total depth 3,626 feet, initial production 85 bbls. per hour.

Retsal Drilling Co.'s No. 19-B Brown, top pay 3,642 feet, total depth 3,744 feet, initial production 60 bbls. per hour. Simmons' No. 2 Thrash, top pay 3,686 feet, total depth 3,776 feet, initial production 22 bbls. in 30 minutes. Stanolind and Pure Oil Co.'s No. 55 Siler, top pay 3,650 feet, total depth 3,691 feet, initial production 33 bbls. per hour. Sun Oil Co.'s No. 8 Selman, top pay 3,670 feet, total depth 3,700 feet, initial production 57 bbls. per hour. Tripp Mean Oil Co.'s No. 6 Thompson, top pay 3,780 feet, total depth 3,810 feet, initial production 80 bbls. per hour. Walter & Sanford's No. 2 Baptist Church, top pay 3,788 feet, total depth 3,808 feet, initial production 42 bbls. in 45 minutes. Ward Oil Co.'s No. 13 Finney, top pay 3,650 feet, total depth 3,695 feet, initial production 55 bbls. per hour.

Smith County

Florence Oil Co.'s No. 1 Wilson, junked and abandoned 3,790 feet. Illinois Oil Co.'s No. 42 Mayfield, top pay 3,829 feet, total depth 3,830 feet, initial production 60 bbls. per hour. Lewis' No. 7 Cook, top pay 3,745 feet, total depth 3,748 feet, initial production 138 bbls. per hour. Magnolia Petroleum Co.'s No. 32 Wright, top pay 3,712 feet, total depth 3,720 feet, initial production 23 bbls. in 8 minutes.

Prince Brothers' No. 3 Atterberry, top pay 3,831 feet, total depth 3,834 feet, initial production 60 bbls. per hour. Sessions Oil Co.'s No. 11 Stone, top pay 3,758 feet, total depth 3,760 feet, initial production 20 bbls. in 20 mintes. Sun Oil Co.'s No. 27 Knight, top pay 3,641 feet, total depth 3,647 feet, initial production 60 bbls. per hour. Wheelis Oil Corp.'s No. 12 Jarvis (Smith), top pay 3,679 feet, total depth 3,685 feet, initial production 25 bbls. in 15 minutes. Wayne and others' No. 1 Green, top pay 3,818 feet, total depth 3,819 feet, initial production 80 bbls. per hour.

Upshur County

Arkansas Drilling Co.'s No. 3 Johnson, top pay 3,681 feet, total depth 3,699 feet, initial production 100 bbls. per hour. Coates' No. 2 Williams, top pay 3,604 feet, total depth 3,615 feet, initial production 120 bbls. per hour. Conservative Oil Co.'s No. 4 Mackey, top pay 3,706 feet, total depth 3,712 feet, initial production 20 bbls. in 15 minutes. Horace-Davis, receiver's No. 1 Landers, top pay 3,716 feet, total depth 3,720 feet, initial production 45 bbls. per hour. Fields' No. 1 Walker, top pay 3,662 feet, total depth 3,665 feet, initial production 45 bbls. in 30 minutes. Lyons-Wadley's No. 2 O'Byrne, top pay 3,761 feet, total depth 3,777 feet, initial production 20 bbls. per hour, pumping.

Humble Oil & Refining Co.'s No. 32 Smith, top pay 3,615 feet, total depth 3,630 feet, initial production 62 bbls. per hour. Magnolia Petroleum Co.'s No. 11 Doby, top pay 3,727 feet, total depth 3,755 feet, initial production 90 bbls. per hour. Rancho Oil Co.'s No. 13 Edwards, top pay 3,627 feet, total depth 3,649 feet, initial production 90 bbls. per hour. Southland and U.E.W.'s No. 34 O'Byrne, top pay 3,637 feet, total depth 3,639 feet, initial production 50 bbls. per hour through three-quarter inch choke; No. 35 O'Byrne, top pay 3,706 feet, total depth 3,712 feet, initial production 30 bbls. per hour through three-quarter inch choke. Sun Oil Co.'s No. 5 Johnson, top pay 3,614 feet, total depth 3,618 feet, initial production 12 bbls. per hour, swabbing. Texas Co.'s No. 5 Culpepper, top pay 3,747 feet, total depth 3,751 feet, initial production 15 bbls. per hour.

Anderson County, Camp Hill Pool

Gulf Production Co.'s No. 1 Delaney, elevation 573 feet, total depth 5,181 feet, initial production 201 bbls. in 24 hours through one-quarter inch choke; Woodbine sand producer.

Gulf Production Co.'s No. 1 Southern Pine Lumber Co., elevation 569 feet, total depth 5,106 feet, initial production 71 bbls. in 13 hours through one-quarter inch choke; sub-Clarksville producer.

Cayuga Area

Tide Water Oil Co. and Texas Seaboard Oil Co.'s No. 22-A Wills, total depth 4,094 feet, initial production 35 bbls. in 24 hours through three-thirty-seconds inch choke.

J. H. Burke's No. 1 Morrison, total depth 4,091 feet, initial production 112 bbls. in 24 hours through one-eighth inch choke.

Hunt County

Cauble and Thompson's No. 2 Reed, 4 miles south of Greenville, dry and abandoned 795 feet.

Wood County

Dean Brothers' No. 1 Finklea, dry and abandoned 2,510 feet, elevation 383 feet.

Nacogdoches County

Morrow and others' No. 1 C. B. Watkins, 3 miles south of Caro, dry and abandoned 4,170 feet.

West Texas Fields

(Continued from Page 64)

4n, T.&P. Survey, Borden County, by an independent operator of Fort Worth.

RANGER AND WICHITA FALLS

Mann, Currie and Neal of Ballinger have purchased the southeast 75 acres of Lot 10, N. Travis Survey No. 533, in the McMillan Pool, Runnels County, from Mann and others, including one well producing 8 bbls. per day, and are to drill No. 2 at once. The purchasers own the Starlight refinery about 2 miles west of the pool, at Hatchell, which is operating on crude from this field. The plant has a daily throughput of 500 bbls.

Dr. H. C. Wright (Carl Petroleum Co.) of Olney, has assembled a drilling block totaling 9,000 acres, centering in T.E.&L. Surveys Nos. 62, 316 and 329 in Young County, and is to drill three 1,100-foot tests at intervals of three months. A 5,000-foot test is to be drilled on one block, about 2 miles southeast of Padgitt.

S. P. Spratt of Mineral Wells has assembled 1,200 acres 5 miles southwest of Bryson, centering in the G. Stevenson Survey, Jack County, to start a 2,500-foot test within 60 days. The block is near the Young County line. If a well is not developed in the 2,500-foot pay it will be carried to 3,500 feet.

Port Bolivar Oil Co. of St. Louis is to drill three tests on the old Verne Dumas block in Grayson County. One block consists of 4,000 acres. The first test is to be on the Mrs. O. G. Durning farm, 2½ miles southwest of Van Alstyne and about 4 miles south of Dumas' No. 1 Buddie-Mollie Williams dry hole. Another test is to be drilled 3 miles southwest and another 7 miles west of Van Alstyne. One block consists of 6,000 acres.

Grace and Woods' No. 1 J. H. Turbeville, Section 182, Thomas Glass Survey, 4 miles west of the Chalk Hill deep production in Archer County, produced an initial of 72 bbls. of high gravity oil in 17 hours on the pump. It is producing from sand logged at 2,830-37 feet, with total depth of 2,845 feet and opens another deep producing area in this county.

The Wichita Falls district produced a daily average of 63,220 bbls. per day during the week. There were 46 tests completed in the district, 26 dry.

PANHANDLE DISTRICT

There were seven starts made in the Panhandle district this week with 10 wells completed. One test, Bell Oil & Gas Co.'s No. 1 Furneaux, 8E¼ of Section 110, Block B-2, H.&G.N. Survey, on the south flank of the granite ridge in Gray County, and about 4½ miles southwest of a wildcat producer and 6 miles south of production in Bowers Field, is still incomplete with the operators bailing oil from the hole at total depth of 3,122 feet. The granite wash formation was logged from 3,064-3,122 feet. At present it does not appear as a flowing well, but will probably have to be placed on the pump. It is one of the few wildcats in the district that has promise of making a producer and opening a pool.

The daily average production in the district was 63,395 bbls. from 2,436 wells, an increase of over 7,600 bbls. per day.

WICHITA FALLS COMPLETIONS

Archer County

Anderson Oil Co. and others' No. 6 C. L. Abercrombie, total depth 1,220 feet, dry and abandoned. L. T. Burns' No. 3 Albers, top pay 1,233 feet, total depth 1,249 feet, initial production 50 bbls. per day. Continental Oil Co.'s No. 14-E Falls, top pay 1,096 feet, total depth 1,112 feet, initial production 29 bbls. per day pumping; No. 11-A W. J. Logan, top pay 1,170 feet, total depth 1,183 feet, initial production 79 bbls. per day pumping; No. 14-A W. J. Logan, total depth 1,250 feet, dry and abandoned. Hardesty-Elliott Oil Corp.'s No. 9 F. Brazina and others, top pay 1,437 feet, total depth 1,439½ feet, initial production 71 bbls. per day; No. 14 W. T. Richardson, top pay 1,435 feet, total depth 1,445 feet, initial production 73 bbls. per day. Florey Oil Co.'s No. 4 F. Brazina and others, top pay 1,431 feet, total depth 1,441 feet, initial production 65 bbls. in 72 hours. Florey and Lumpkin's No. 1 G. E. Fichte, total depth 1,508 feet, dry and abandoned. W. B. Hamilton's No. 29 W. Pace, top pay 1,147 feet, total depth 1,158½ feet, initial production 75 bbls. per day; No. 32 W. Pace, total depth 1,192 feet, dry and abandoned; No. 3 J. M. Powell, top pay 1,135 feet, total depth 1,143 feet, initial production 60 bbls. per day.

A. B. Hostic and others' No. 1 Neal Wilburn (old well deepened, formerly abandoned at 1,200 feet), total depth 1,405 feet, dry and abandoned. G. S. Kent and others' No. 1 T. J. Dempsey, total depth 540 feet, dry and abandoned. Martin and Hines' No. 3 William Justice, top pay 1,089 feet, total depth 1,103 feet, initial production 45 bbls. in 24 hours pumping. Petroleum Producers' No. 1-G W. H. Portwood, total depth 1,458 feet, dry and abandoned. Charles Percifield's No. 1 Ward Brothers, total depth 1,064 feet, dry and abandoned. Perkins and Cullum's No. 182 Falls, top pay 1,156 feet, total depth 1,177 feet, initial production 25 bbls. per hour swabbing. White and Duncan's No. 6-B S. Webb, top pay 724 feet, total depth 726 feet, initial production 10 bbls. per day; No. 7-B S. Webb, top pay 691 feet, total depth 697 feet, initial production 10 bbls. per day.

Baylor County

C. P. Sheldon and others' No. 1 F. Gatzki, total depth 1,700 feet, dry and abandoned.

Clay County

Regal Oil Co.'s No. 1 G. H. White, total depth 751 feet, dry and abandoned.

Cooke County

Fain-McGaha Oil Corp.'s No. 4 A. A. Otto, total depth 1,307 feet, dry and abandoned. Petroleum Producers' No. 1 W. H. Campbell and others, total depth 995 feet, dry and abandoned. Pois and Schultz' No. 1 T. H. Sears, total depth 1,960 feet, dry and abandoned.

Denton County

A. E. Pierson and others' No. 1 H. F. Fangman, total depth 1,520 feet, dry and abandoned.

Grayson County

E. V. Abernathy and others' No. 1 Elizabeth Christman, total depth 915 feet, dry and abandoned.

Jack County

J. M. Bloodworth's No. 1 C. S. Swasey, total depth 370 feet, dry and abandoned.

Wichita County

Blair and Schlaffke's No. 4 Honaker, top pay 1,056 feet, total depth 1,072 feet, initial production 10 bbls. per day. Waggoner Estate's No. 6-X Waggoner Estate, total depth 2,024 feet, dry and abandoned.

Montague County

Bridwell Oil Co.'s No. 1 W. W. Radford, total depth 2,568 feet, dry and abandoned. Pure Oil Co.'s No. 4 Mrs. F. E. Loy (old well deepened from 820

feet), top pay 896 feet, total depth 905 feet, initial production 12 bbls. per day. Raisen Brothers' No. 5 G. Hinton, top pay 798 feet, total depth 802 feet, initial production 4 bbls. of oil and 25 bbls. of water per day.

Wilbarger County

Riner and Massie and others' No. 11-A Waggoner Estate, top pay 1,862 feet, total depth 1,876 feet, initial production 320 bbls. per day. Riner and Massie's No. 12-A Waggoner Estate, top pay 1,894 feet, total depth 1,908 feet, initial production 330 bbls. per day.

Wise County

F. P. Tatum and others' No. 1 Doctor Workman, total depth 455 feet, dry and abandoned.

Young County

L. T. Burns' No. 2 J. L. Castleman, total depth 1,300 feet, dry and abandoned. R. Clampitt and others' No. 1 Perkins, total depth 776 feet, dry and abandoned; No. 1 N. B. Peters, total depth 830 feet, dry and abandoned. B. C. Gilmore and others' No. 1 S. S. Wallace, total depth 609 feet, dry and abandoned. S. D. Glover's No. 18 C. W. Johnson, top pay 513 feet, total depth 535 feet, initial production 4 bbls. per day. L. G. Hawkins and others' No. 4 J. M. Kirkland, total depth 742 feet, dry and abandoned. E. R. Perkins and others' No. 1 Neal Wilburn, total depth 1,405 feet, dry and abandoned. Sams and Kuebecka's No. 4 Cullers and others, total depth 590 feet, dry and abandoned. Westheimer and Daube's No. 13 B. H. Larrimore, total depth 723 feet, dry and abandoned.

COMPLETIONS IN PANHANDLE

Gray County

Bradshaw Oil & Gas Co.'s No. 3 Sackett, top pay 3,255 feet, total depth 3,305 feet, initial production 369 bbls. per day pumping. Kewanee Oil & Gas Co.'s No. 12 Smith Rest, top pay 3,153 feet, total depth 3,248 feet, initial production 322 bbls. per day pumping. Suloch Oil Co.'s No. 6 Morse, top pay 2,688 feet, total depth 2,725 feet, initial production 55 bbls. per day pumping. Sun Oil Co.'s No. 10 Combs-Worley, top pay 2,873 feet, total depth 2,970 feet, initial production 1,325 bbls. per day on gas lift. Texas Co.'s No. 5 Short, top pay 2,916 feet, total epth 3,020 feet, shot 40 quarts from 2,916-56 feet and 160 quarts from 2,956-3,020 feet, initial production 219 bbls. per day pumping. Wilcox Oil & Gas Co.'s No. 35 Worley-Reynolds, top pay 3,033 feet, total depth 3,047 feet, initial production 604 bbls. per day pumping.

Hutchinson County

J. E. Crosbie, Inc.'s No. 7 Pitts, top pay 2,845 feet, total depth 2,935 feet, shot 400 quarts from 2,845-2,930 feet, initial production 294 bbls. per day pumping. Dixon Creek Oil & Refining Co.'s No. 3-K Cockrell, top pay 2,886 feet, total depth 2,962 feet, shot 320 quarts from 2,886-2,957 feet, initial production 249 bbls. per day pumping. Harry Stekoll Oil Producer's No. 7-B Whittenburg, top pay 2,960 feet, total depth 2,985 feet, shot 450 quarts from 2,910-80 feet, initial production 441 bbls. per day pumping; No. 8-B Whittenburg, top pay 2,955 feet, total depth 3,020 feet, shot 200 quarts from 2,955-3,020 feet, initial production 349 bbls. per day pumping.

COMPLETIONS IN WEST TEXAS

Ector County

Stanolind Oil & Gas Co.'s No. 16 Cowden, top pay 4,276 feet, total depth 4,322 feet, shot with 200 quarts from 4,206-4,317 feet, initial production 864 bbls. per day; No. 17 Cowden, top pay 4,180 feet, total depth 4,252 feet; shot with 270 quarts from 4,180-4,252 feet, initial production 1,451 bbls. per day. Sun Oil Co.'s No. 4 Wight, top pay 4,245 feet, total depth 4,280 feet, shot with 155 quarts from 4,200-80 feet, initial production 257 bbls. per day. Landreth Production Co.'s No. 1-B Holt, top pay 4,274 feet, total depth 4,323 feet, shot with 20 quarts from 4,269-4,317 feet, initial production 120 bbls. per day; No. 1 Cowden heirs, dry and abandoned at 4,470 feet; elevation 3,192 feet; top salt 1,448 feet, top lime 3,708 feet, shot oil at 4,294-4,310 feet and 4,317-27 feet.

Howard County

Clay Brothers and White's No. 1 Read, top pay 2,618 feet, total depth 2,782 feet, initial production 150 bbls. per day, pumping. Irion Mountain Oil Co.'s No. 6 Read, top pay 2,560 feet, total depth 2,794 feet, initial production 369 bbls. per day, pumping.

Jones County

Oyster's No. 1 Steele, dry and abandoned at 1,970 feet, elevation 1,676 feet. Campbell and others' No. 1 Enevill, dry and abandoned 2,498 feet; one-half mile south of Anson.

Pecos County

Cardinal Oil Co.'s No. 1 White and Baker, elevation 2,713 feet, total depth 1,790 feet, plugged back to 1,784 feet, initial production 11.000,000 feet of gas from 1,542 feet.

Reagan County

John Emch and others' No. 1 Mrs. E. P. Belcher, elevation 2,631 feet, dry and abandoned at 3,667 feet.

Scurry County

C. T. McLaughlin's No. 1 W. C. Allen, elevation 2,554 feet, dry and abandoned at 3,009 feet.

Upton County

Texas Pacific Coal & Oil Co.'s No. 1 Cordova Union Land, top pay 2,045 feet, total depth 2,235 feet, plugged back to 2,108 feet, shot with 40 quarts from 2,045-65 feet, initial production 111 bbls. in 12 hours, pumping.

Ward County

Richardson's No. 22-B Johnson, top pay 2,395 feet, total depth 2,580 feet, shot with 300 quarts from 2,420-2,575 feet, initial production 510 bbls. per day.

Winkler County

Green's No. 1 J. F. Cross, temporarily abandoned.

COLON DIRECTORATE

NEW YORK, June 24.—Richard Airey, W. Gould, R. G. A. van der Woude, J. C. Van Eck and H. Wilkinson have been elected to the board of directors of the Colon Oil Corp., the number of directors being reduced from eight to five. Arthur H. Bunker, chairman; Ernest Stauffen, Jr., and Harold J. Wasson retired.

Richard Airey, president of the Colon corporation, announced the corporation would default interest July 1 on the 6 per cent debentures. About $10,000,000 debentures are outstanding. Mr. Airey said while reorganization plans had been discussed no plan had been decided. La Corona Petroleum Co. (Royal Dutch-Shell) has offered to purchase not less than $1,500,000 of the debentures at a flat price of 66⅔. This offer has been accepted by minority interests.

PURE OIL REFUNDING

NEW YORK, June 24.—Stockholders of Pure Oil Co. will be asked to grant authority to refund $27,500,000 notes carrying non-detachable warrants which give the noteholders the right to buy up to 30 shares of common for each $1,000 note. Henry M. Dawes said the company's earnings had increased this year with an estimate of a net of $1,700,000 for the first four months.

ALBERTA GEOLOGICAL SURVEY

EDMONTON, Alberta, June 22.—Dr. L. S. Russell, of Ottawa, geologist for the federal government, has arrived here to conduct a survey for oil, gas and artesian water in Alberta. Survey operations, requiring a party of 11, will continue till October, and will center about Manyberries, in southern Alberta.

West Texas Wildcats

(Continued from Page 64)

660 ft. from E line of Sec. 21, Blk. 97, P.S.L. Sur.
S.D. 2,137 ft.

DAWSON COUNTY

Adams & Turner's No. 1 John Robinson, 1,320 ft. from N line, 1,320 ft. from W line of Sec. 46, Blk. M, E.L.R.R. Sur.
Fishing 4,860 ft.

O. F. Dickinson, trustee's No. 1 C. H. Doaks, 368 ft. from S and 330 ft. from E of SW cor., Sec. 4, Blk. H, E.L. Ry. Co. Sur.
S.D. 155 ft.

ECTOR COUNTY

Atlantic Oil Prod. Co.'s No. 1 T. P. Land Trust, 440 ft. from N and W of SE Sec. 11, Blk. 43, Twp. 1s, T.&P. Sur.
T.D. 4,391 ft.; plugged back to 4,255 ft.; testing.

Continental Oil Co.'s No. 1 Wight, 2,200 ft. from S and W, Sec. 21, Blk. 43, Twp. 1s, T.&P. Sur.
Rig.

Empire Gas & Fuel Co.'s No. 1 Cummins, 440 ft. from S and E, Sec. 10, Blk. 45, Twp. 1n, T.&P. Sur.
T.D. 4,130 ft.; 2,000,000 ft. gas here.

Eppenauer Drlg. Co. et al No. 1 Wight, 440 ft. from N and W of NE ¼ Sec. 22, Blk. 43, Twp. 1s, T.&P. Sur.
Rigged up.

Landreth Prod. Co.'s No. 1-B Blakney, 440 ft. from S and W, Sec. 22, Blk. 44, Twp. 1n, T.&P. Sur.
Elev. 3,172 ft.; drlg. 1,709 ft.

Landreth Prod. Co.'s No. 1 Blakeney, 440 ft. from N and E, Sec. 28, Blk. 43, Twp. 1n, T.&P. Sur.
Elev. 3,066 ft.; drlg. 1,400 ft.

Landreth Prod. Co.'s No. 2 Scharbauer, 2,200 ft. from N and 440 ft. from W, Sec. 13, Blk. A, P.S.L. Sur.
Elev. 3,142 ft.; S.D. 3,770 ft.

C. L. Peters' No. 1 Connell, 330 ft. from N and E lines of NW of Sec. 12, Blk. B-16, P.S.L. Sur.
S.D. 2,468 ft.

Phillips Pet. Co. and Pure's No. 1 C. Cowden, 2,200 ft. from N and 440 ft. from W, Sec. 14, Blk. 44, Twp. 1s, T.&P. Sur.
Elev. 3,100 ft.; drlg. 1,440 ft.

Phillips Pet. Co. and Pure Oil Co.'s No. 2 C. Cowden, 440 ft. from S and W, Sec. 23, Blk. 44, Twp. 1s, T.&P. Sur.
Rigged up rotary.

EL PASO COUNTY

Tri-State Oil Co.'s No. 1 Kinkel, 190 ft. from N and 550 ft. from E, Sec. 237, A.T.&S.F. Sur.
S.D. 535 ft.

FISHER COUNTY

George Callihan et al's No. 1 Herring, 2,310 ft. from S and 330 ft. from W lines of Sec. 192, Blk. 1, B.B.B.&C. Sur.
Elev. 1,804 ft.; T.D. 3,126 ft.; acidizing.

Russ Petroleum Co.'s No. 1 Reynolds, 550 ft. from S and 420 ft. from E of SW ¼ Sec. 3, Blk. R, W. E. Richardson Sur.
Elev. 1,832 ft.; S.D. 3,135 ft.

Tide Water Oil Co. et al's No. 1 W. E. Hittson et al, 1,320 ft. from N and 660 ft. from W, Sec. 177, Blk. 2, H.&T.C. Sur.
Elev. 1,871 ft.; drlg. 2,678 ft.

GARZA COUNTY

N. L. Richards' No. 1 Sullivan, 330 ft. from N and W, Sec. 3, Blk. 5, K. Aycock Sur.
Elev. 2,534 ft.; T.D. 2,940 ft.; acidized; tesing.

GLASSCOCK COUNTY

John I. Moore et al's No. 1 J. S. McDowell, 1,980 ft. from N line and 660 ft. from E line of Sec. 22, Blk. 34, Twp. 2s, T.&P. Sur.
Topped lime 9,471 ft.; show oil and gas 9,484-9,520 ft.; increase oil 9,594-9,600 ft. and 9,633-55 ft.; T.D. 9,946 ft.

HOWARD COUNTY

Eastland Oil Co.'s No. 1 D. H. Snyder, SW cor. Sec. 28, Blk. 30, Twp. 1s, T.&P. Sur.
Machine.

John I. Moore et al's No. 1 Snyder, 330 ft. from S and W, Sec. 28, Blk. 30, Twp. 1s, T.&P. Sur.
Elev. 2,302 ft.; S.D. 1,835 ft.

Texas Co.'s No. 10 Schalk, W half Sec. 18, Blk. 19, Lavaca Navigation Co. lands.
T.D. 1,203 ft.; underreaming.

Wooten's No. 1 Blank, NW ¼ Sec. 46, Blk. 30, Twp. 1n, T.&P. Sur.
Location.

JEFF DAVIS COUNTY

C. M. Joiner's No. 1 Jones & Coffield, 770 ft. from N and 1,322 ft. from E. Sec. 8, Blk. 3, H.&T.C. Sur.
Fishing 1,288 ft.

JONES COUNTY

Campbell et al's No. 1 Rowell, in E half of W half, Sec. 6, T.&P. Sur.
Drlg. 1,562 ft.

R. L. Crawford's No. 1 Wattzer, 200 ft. from S and W, Sec. 1, T.&N.O. Sur.
Location.

Davenport & Hughes' No. 1 J. D. Farrell, 1,100 ft. from N and 1,540 ft. from E, Sec. 6, Blk. 15, T.&P. Sur.
Rigged up machine.

A. B. Farris et al's No. 1 J. W. Jennings, 1,980 ft. from S and 660 ft. from E, Sec. 207, B.B.B.&C. Sur.
Drlg. 1,212 ft.

Moutray & King's No. 1 R. Prichard, 460 ft. from N and 200 ft. from W, Sub. 1, G. Martinez Sur., 5 miles N of Hawley.
T.D. 1,665 ft.; set csg.

Sandy Ridge Oil Co.'s No. 3 Jones, 1,520 ft. from N and 660 ft. from W, Sec. 5, Blk. 15, T.&P. Sur.
Location.

Ungren & Frazier's No. 1 King Ranch, 200 ft. from N and E of NW half, Blk. 5, M. Bueno Sur.
S.D. 1,588 ft.

KIMBLE COUNTY

Wilcox Oil & Gas Co.'s No. 1 J. Patterson, 200 ft. from N and E, Sec. 1, D.&P.R.R. Sur.
Drlg. 920 ft.

LOVING COUNTY

D. C. Evans' No. 1 W. D. Johnson, 2,310 ft. from N and 1,650 ft. from W, Sec. 12, Blk. 57, Twp. 1, T.&P. Sur.
S.D. 2,170 ft.

Mason Oil Co.'s No. 1 Kyle, 1,980 ft. from S and E, Sec. 22, Blk. 55, Twp. 1, T.&P. Sur.
Drlg. 2,463 ft.

LYNN COUNTY

Hart Oil Co.'s No. 1 Edwards, 220 ft. from N and 200 ft. from W of SE Sec. 29, I.&S.V. Sur.
Elev. 3,112 ft.; S.D. 4,817 ft.

MARTIN COUNTY

Wright & Scott's No. 1 Flannigan, 330 ft. N and E, Sec. 22, Blk. 37, Twp. 1s, T.&P. Sur.
S.D. 100 ft. for csg.

MITCHELL COUNTY

Sawtell & Grueber's No. 1 Morrison.
T.D. 1,845 ft.; underreaming csg.

Texas Co.'s No. 1 Terry, 300 ft. from S and 1,650 ft. from E of W 485 acres, Sec. 62, Blk. 29, W.&N.W. Sur.
Drlg. 350 ft.

PECOS COUNTY

Adams et al's No. 2 Masterson, 1,630 ft. from SE and 330 ft. from SW, Sec. 104, Blk. 10, H.&G.N. Sur.
Drlg. 525 ft.

Gulf Prod. Co.'s No. 6 White & Baker, 330 ft. from N and W, Sec. 94, Blk. 194.
Elev. 2,847 ft.; S.D. 1,100 ft.

W. Hicks' No. 1 Fromme, 1,980 ft. from NE and 2,310 ft. from SE, Sec. 106, Blk. 10, H.&G.N. Sur.
Location.

C. R. Richards' No. 4 Courtney, 920 ft. from N and W, Sec. 78, Blk. OW, 360 ft. S of No. 2.
Elev. 2,967 ft.; S.D. 220 ft.

Samwan Oil Co.'s No. 2 Masterson, 330 ft. from W and 990 ft. from S lines of Sec. 104, Blk. 10, H.&G.N. Sur.
Drlg. 1,002 ft.

Trans-Tex. Oil Co.'s No. 1 Caldwell, 330 ft. from E line and 330 ft. from S line of Sec. 27, Blk. 40, Twp. 9, T.&P. Sur.
T.D. 2,380 ft.; C.O.

REAGAN COUNTY

Dobbs No. 1 Friend, 2,310 ft. from S and 660 ft. from W of Blk. 3, Wm. Allen Sur., 2 or 3 miles S of Big Lake.
S.D. 2,465 ft.; P.B. 2,454 ft.; shot and started spraying.

Skelly Oil Co.'s No. 1-D H. S. Grayson, 1,980 ft. from N line and 660 ft. from W line of Sec. 33, Blk. 8, University Land Sur.
S.D. 9,967 ft.; bridged back to 3,100 ft.; pumped all water in 3-hr. test.

REEVES COUNTY

Dunigan's No. 1 Davis, 330 ft. from N and W, Sec. 7, Blk. 58, P.S.L. Sur.
Location.

Herbert Oil Co.'s No. 1 Williams & Walker, 5,280 ft. from S and 1,320 ft. from E, Sec. 17, Blk. 6, H.&G.N. Sur.
Elev. 2,536 ft.; T.D. 3,268 ft.; standardizing.

K. Slack et al's No. 1 Reeves, C NW ¼ Sec. 20, Blk. 56, P.S.L. Sur., 22 mi. N of Toyah.
Drlg. 512 ft.

Washington Oil Co.'s No. 1 J. M. Radford Grocery Co., 2,640 ft. from S and 340 ft. from E, Sec. 39, Blk. 56, P.S.L. Sur.
Drlg. 343 ft.

RUNNELS COUNTY

Dennis et al's No. 1 Wash, 550 ft. from N and 660 ft. from E of W half, Sec. 122, E.T.R.R. Sur.
Shut down.

Melrose Oil Co.'s No. 1 L. P. Woods, 150 ft. from NE lines and 3,476 ft. from W line of survey, Willett Holmes Sur. No. 100.
S.D. 2,507 ft.

R. Wells' No. 1 James, 296 ft. from N and 330 ft. from E of James tract in Sec. 16, D. Diaz Sur.
S.D. 2,179 ft.

Wolverton's No. 1 Willingham, 200 ft. from river and in C of Wilhelm-Wolfgang Sur. No. 425, 1¼ miles SE of Ballinger.
Fishing 1,403 ft.

SCHLEICHER COUNTY

John M. Cooper et al's No. 1 Bert Page, 1,290 ft. from N line, 1,470 ft. from W line of Sec. 40, Blk. L, G.H.&S.A. Sur.
Drlg. 6,175 ft.; hole full salt water 6,145-55 ft.

W. C. Proctor et al's No. 1 Judkins & Spencer, C SW¼ Sec. 4, Blk. V.28.
Fishing 580 ft.

SCURRY COUNTY

Coffield & Guthrie's No. 1 Wade, 990 ft. from N and 330 ft. from W, Sec. 115, Blk. 97, H.&T.C. Sur.
Location.

M. L. Goss et al's No. 1 J. E. Murphy, 330 ft. from N and 1,650 ft. from E, Sec. 114, Blk. 97, H.&T.C. Sur.
Elev. 2,267 ft.; drlg. 1,850 ft.; show oil 1,730 ft., 1,765 ft. and 1,810 ft.

Magnolia Pet. Co.'s No. 1 J. W. Mooar, 1,630 ft. from N and 990 ft. from E, Sec. 242, Blk. 97, H.&T.C. Sur.
Elev. 2,516 ft.; drlg. 1,000 ft.

STONEWALL COUNTY

Barnsdall Oil Co.'s No. 1 S. Young, 350 ft. from N and E, Sec. 26, Austin & Williams Sur. 349.
Elev. 1,726 ft.; S.D. 2,625 ft.

SUTTON COUNTY

Paul C. Teas' No. 1 G. S. Allison, 660 ft. from S and W, Sec. 49, Blk. A, G.W.T.&P. Sur.
Location.

TAYLOR COUNTY

Anderson et al's No. 1 J. C. High, 2,310 ft. from N and 990 ft. from E, Sec. 8, L.&L. Sur.
Rigged up.

Skaggs & Brewer's No. 1 McClure, 330 ft. from N and E S half SW Sec. 8, L.&L. Sur.
Drlg. 1,567 ft.

TOM GREEN COUNTY

Jacobs et al's No. 2 DeLong, 150 ft. from N and 450 ft. from E, James Webb Sur. No. 43.
S.D. 515 ft.

Twin Oil Co.'s No. 1 W. E. Green, 1,050 ft. from N and 1,400 ft. from W, L. P. Moore Sur. 169½.
S.D. 315 ft.

UPTON COUNTY

Gulf Prod. Co.'s No. 103 McElroy, 1,980 ft. from S and 660 ft. from W, Sec. 197, Blk. F, C.C.S.D.&R.G.N.G. Sur.
T.D. 12,786 ft.; P.B. to 9,952 ft.; treated with 3,000 gals. acid; no results.

Humble Oil & Ref. Co.'s No. 1 Pollock, C of NW, Sec. 4, Blk. M.
Drlg. 6,627 ft.

Williams & Williams Drlg. Co.'s No. 1 Robbins, 1,600 ft. from S and 1,900 ft. from E, Sec. 4, G.C.&S.F. Sur.
T.D. 2,050 ft.; C.O. and testing.

WARD COUNTY

Alexander's No. 1 Richter, 1,650 ft. from NW, 1,170 ft. from NE line of Sec. 27, Blk. 34, H.&T.C. Sur.
Drlg. 2,310 ft.

Bradford et al's No. 1 E. B. Allen, 660 ft. from NW line and 551 ft. from NE line, Sec. 11, Blk. 5, H.&T.C. Sur.
T.D. 1,520 ft.; trying to drive csg.

Caprito's No. 1 Hardage & Wilson, 2,310 ft. from NE and 990 ft. from SE, Sec. 11, Blk. 34, H.&T.C. Sur.
Drlg. 125 ft.

Eastland Oil Co.'s No. 1 C. D. Mason, 330 ft. from SW and SE, Sec. 14, Blk. 34.
Drlg. 1,200 ft.

Gulf Prod. Co.'s No. 58 O'Brien, 330 ft. from E and 1,650 ft. from S, Sec. 18, Blk. F.
Drlg. 2,490 ft.

Gulf Prod. Co.'s No. 57 O'Brien, 2,310 ft. from S and 330 ft. from E, Sec. 18, Blk. F.
T.D. 2,755 ft.; shot and swabbing.

Magnolia Pet. Co.'s No. 2 Sealy Estate, 2,310 ft. from S and 330 ft. from W, Sec. 43, Blk. F.
T.D. 2,753 ft.; U.R.

Jerry Sines' No. 1 Brown, 330 ft. from NW and NE, Sec. 13, Blk. 5, H.&T.C. Sur.
T.D. 3,148 ft.; P.B. 3,075 ft.; C.O. and swabbing.

West Texas O. & R. Co.'s No. 1-C University, 330 ft. from N and E, Sec. 6, Blk. 14.
T.D. 2,670 ft.; T.P. 2,540 ft.; swabbing and C.O.

WINKLER COUNTY

Barnsdall Oil Co.'s No. 1 Brown & Altman, 2,310 ft. from S and E, Sec. 6, Blk. B-5.
Elev. 2,844 ft.; T.D. 3,218 ft.; P.B. to 3,195 ft.; shot and C.O.

Emperor Oil Co.'s No. 1 Halley, 1,650 ft. from S and 330 ft. from E, Sec. 12, Blk. B-12.
Elev. 2,764 ft.; S.D. 1,354 ft.

Fox & Butler's No. 1 Brown & Altman, 2,310 ft. from S and 1,650 ft. from E, Sec. 6, Blk. B-5.
Elev. 2,847 ft.; drlg. 2,559 ft.

Gulf Prod. Co.'s No. 1 Keystone Cattle Co., NE of NW, Sec. 10, Blk. B-3, P.S.L. Sur.
Elev. 2,942 ft.; drlg. 3,050 ft.

Gulf Prod. Co.'s No. 2 Keystone Cattle Co., NW cor. Sec. 17, Blk. B-2.
Elev. 2,951 ft.; T.D. 3,368 ft.; reaming hole.

Gulf Prod. Co.'s No. 3 Keystone Cattle Co., 330 ft. from N and W of NE ¼ Sec. 11, Blk. B-3.
Drlg. 2,333 ft.

Gulf Prod. Co.'s No. 4 Keystone Cattle Co., 330 ft. from N and E, Sec. 20, Blk. B-3.
Drlg. 2,000 ft.

Gulf Prod. Co.'s No. 5 Keystone Cattle Co., 330 ft. from N and W of SW¼ Sec. 6, Blk. B-2.
Elev. 2,952 ft.; drlg. 2,902 ft.

Gulf Prod. Co.'s No. 6 Keystone Cattle Co., 330 ft. from N and W of NE¼ Sec. 16, Blk. B-2.
Elev. 2,950 ft.; drlg. 2,305 ft.

Gulf Prod. Co.'s No. 7 Keystone Cattle Co., 330 ft. from N and W of SW ¼ Sec. 14, Blk. B-2.
Rigged up.

Gulf Prod. Co.'s No. 8 Keystone Cattle Co., 330 ft. from S and W of Sec. 13, Blk. B-2.
Rigged up.

Gulf Prod. Co.'s No. 9 Keystone Cattle Co., 330 ft. from S and W of Sec. 18, Blk. B-2.
Elev. 2,946 ft.; rig.

Harry Adams' No. 2 Scarborough, 990 ft. from N line and 990 ft. from W line, Sec. 2, Blk. 77, P.S.L. Sur.
Rigged up machine.

Humble Oil & Ref. Co.'s No. 2-A Walton, 660 ft. from S and W, Sec. 48, Blk. 26.
Derrick.

K-D Oil Co.'s No. 1 P. Mitchell, 1,650 ft. from N and 2,310 ft. from E, Sec. 23, Blk. B-10, P.S.L. Sur.
Location.

J. C. Maxwell's No. 1 Brown & Altman, 2,310 ft. from N and 990 ft. from W, Sec. 6, Blk. B-5.
Elev. 2,844 ft.; T.D. 2,570 ft.; C.O.

Mid-Continent Pet. Corp.'s No. 2 Howe, 1,650 ft. from N and 330 ft. from W, Sec. 13, Blk. 26.
T.D. 2,989 ft.; rigged up rotary.

Richardson's No. 1 Walton, 1,010 ft. from S and 330 ft. from W, Sec. 1, Blk. B-3.
Coring 3,125 ft.; saturated core 3,040-41 and 3,042-48 ft.

Skelly Oil Co.'s No. 2 Halley, 1,320 ft. from N and 2,200 ft. from E, Sec. 25, Blk. B-11, P.S.L. Sur.
S.D. 3,090 ft.

Skelly Oil Co.'s No. 3 Halley, 2,200 ft. from N and 1,320 ft. from E, Sec. 25, Blk. B-11.
Rotary rigged up.

Sioux Oil Co.'s No. 1 Lowett, 330 ft. from N and E, Sec. 36, Blk. 26, P.S.L. Sur.
T.D. 2,727 ft.; reloading hole.

Sun Oil Co.'s No. 1 Halley, 2,200 ft. from N and 440 ft. from E, Sec. 24, Blk. B-12, P.S.L. Sur.
T.D. 3,170 ft.; P.B. 2,750 ft.; water at 3,170 ft.

Texas Pacific Coal & Oil Co.'s No. 2 Daugherty, 1,650 ft. from S and 330 ft. from E, Sec. 2, Blk. 26, P.S.L. Survey.
T.D. 3,057 ft.; testing.

Weaver et al's No. 1 T. Morton, 330 ft. from S and E of N half, Sec. 11, Blk. B-12.
Elev. 2,767 ft.; S.D. 1,278 ft.

YOAKUM COUNTY

C. J. Davidson et al's No. 1 Bennett, 1,320 ft. from N and E, Sec. 678, John H. Gibson Sur.
Drlg. 806 ft.

East Central Texas Wildcats

(Continued from Page 65)

ft. from N and E lines of 70-ac. tract, 1 mile SE of Miller Bros. A. Caro Sur.
T.D. 2,950 ft.

HUNT COUNTY

J. F. Morrissey & Co., Inc.'s No. 1 Fry, 543 ft. from N and 200 ft. from E of 146-ac. tract, 7 miles N of Commerce, C. Davis Sur.
Coring 1,850 ft.

H. G. Samson's No. 1 Phillips, 1,200 ft. E of Winan's No. 1 Phillips, University Lands Sur., 2 miles W of Commerce.
Elev. 522 ft.; top Woodbine 2,596 ft.; top red beds 2,750 ft.; drlg. shale 2,880 ft.
Elev. 522 ft.; top Woodbine 2,596 ft.; S.D. 2,913 ft.

KAUFMAN COUNTY

Germany et al's No. 1 Clark, 951 ft. N and 1,000 ft. W of tract, S. Eden Sur.
T.D. 1,780 ft.

Murry & Emerson's No. 1 G. W. Martin, 1,660 ft. from W and 250 ft. from N of 140-ac. tract, from W. L. C. Butler Sur., 2 miles NE of Kemp.
Drlg. 1,500 ft.

L. P. Kean's No. 1 J. B. Hunter, R. Sowell Sur., 300 ft. from SW and 150 ft. from SE of 50-ac. tract, 4 miles S of Terrell.
S.D. 3,400 ft.

LEON COUNTY

Killough & Tucker's No. 1 G. W. Lee, center of NE 10 acres of 230-ac. tract, J. Burleson Sur.
Elev. 303 ft.; base Austin 5,239 ft.; drlg. 5,245 ft.

LIMESTONE COUNTY

J. Edward Mills' No. 1 Hunt, 200 ft. from N, 350 ft. from W line 34.75-ac. tract, Israel Wood Sur., 3 miles NE of Kosse.
S.D. 3,654 ft.

Doughtry et al's No. 1 S. Welch, 150 ft. from NW and 900 ft. from NE of 77.64-acre tract in A. Varilia Sur., 4 miles W of Groesbeck.
Fishing 3,008 ft.

Y. Rogers' No. 1 J. M. Tidwell, 330 ft. from S and E of 230-ac. tract, P. Varella Sur., 3 miles SW of Mexia.
Derrick.

McLENNAN COUNTY

Mahan et al's No. 1 Mann, 1,100 ft. W of Simms Oil Co.'s No. 1 Mann, Carlos Tampo Sur., W of Robertsonville.
S.D. 700 ft.

NACOGDOCHES COUNTY

Douglas Exploration Co.'s No. 1 Hayter, 1,497 ft. from S and 2,582 ft. from W lines of tract, Santos Coy Sur.
S.D. 5,061 ft.

Morrow et al's No. 1 Mrs. J. J. Holton, 900 ft. from W and 1,200 ft. from S 50-ac. tract, B. Flores Sur., 5 miles E of Nacogdoches.
Drlg. 300 ft.

Stebbinger & Baker, trustee's No. 1 Mrs. A. Mattauer, 408 ft. from W and 467 ft. from N of 440-ac. tract, R. Totin Sur., 4 miles SE of Cherino.
Drlg. 200 ft.

NAVARRO COUNTY

Bennett Brothers' No. 1 T. E. Stewart, 100 ft. from NE line of lease, 10 miles SW of Corsicana, Wm. R. Bowen Sur.
T.D. 1,186 ft.; S.D.

R. B. Codding et al's No. 1 Lela Kent, 480 ft. from S line and center of N and S lines of lease, 3 miles NE of Chatfield, C. B. Emmons Sur.
S.D. 1,340 ft.

W. J. Keeling et al's No. 1 J. F. Rushing 484 ft. from N line and 150 ft. from W line of 134-ac. tract, 6 miles SW of Richardson, Henry Ford Sur.
T.D. 2,881 ft.

McCullough et al's No. 1 C. Berry, 330 ft. from SE cor. of 35-acre tract, 1 mile W of Dawson, William Moss Sur.
S.D. 1,152 ft.

E. M. Thomason & Co.'s No. 1 C. Morgan, 340 ft. from W and 520 ft. from N of 100-ac. tract, Wm. Haggard Sur., 1 mile SW of McGlothlin's No. 1 Dobbin.
S.D. 830 ft.

Wiggins et al's No. 1 Donoho, 450 ft. from N and 1,101 ft. from E lines in John Couple Sur., SW of Corsicana.
S.D. 1,439 ft.

RAINS COUNTY

Allen & McClung's No. 1 Giles, T. Cunningham Sur., Abst. 143, 330 ft. from W line and 200 ft. from N line of 105-ac. Giles tract, 5 mi. SW of Emory.
Derrick.

Allen & McClung's No. 1 Ida Bullard, N. Brantely Sur., 1,300 ft. from W line and 300 ft. from N line of 25-ac. tract, 2 mi. SW of Emory.
Derrick.

RED RIVER COUNTY

Joiner's No. 1 D. Rust, C. C. Wilborn Sur., 234 ft. N and 254 ft. W of most southerly SE cor. of Sur., just south of Avery.
Moving in rig.

RUSK COUNTY

Ben Lamb's No. 1 H. Leath, 330 ft. out of NW cor. of 185-ac. tract in L. J. Dooley.
T.D. 4,740 ft.; P.B. to 4,710 ft.
Richardson's No. 1 Wood.
Fishing 4,251 ft.

SMITH COUNTY

Bowers et al's No. 1 M. Landers, 330 ft. from S and E of 215-ac. tract, S.A.&M.G. Sur., 3 miles NE of Jamestown.
Drlg. 50 ft.

R. W. Fair et al's No. 1 F. Terrell, 330 ft. out of NE cor. of 72-ac. tract, Eli Delk Sur., 2½ miles NE of Sand Flat.
Drlg. 4,340 ft.

W. R. Harrison's No. 1 Rushing, J. Herring Sur. (O.W.D.D.).
T.D. 4,330 ft.; set whipstock 4,220 ft.

Sun and Hunt Prod. Co.'s No. 1 E. W. Judge, 330 ft. S and E of 55.5-ac. tract, 3½ miles SE of Tyler.
Drlg. 4,960 ft.

TITUS COUNTY

S. Rotondi's No. 1 Lillianstun, 1,300 ft. E from NW cor. of J. Bodt Sur. and 330 ft. N, but in W. H. Crawford Sur., 5 miles NE of Talco.
Elev. 301 ft.; derrick.

VAN ZANDT COUNTY

J. H. Foster et al's No. 1 Breucher, 330 ft. out of SE cor. of tract, D. Clapp Sur., 4 miles SE of Wills Point.
Top Austin 3,014 ft.; drlg. 3,565 ft.

J. Beren et al's No. 1 Bryant, 483 ft. N of same operator's dry hole, Nacogdoches County School Land Sur.
S.D. 1,325 ft.

Beren et al's No. 2 Palmer, 544 ft. from S and 686 ft. from E of 69.5-ac. tract, Nacogdoches County School Land.
Standing; T.D. 1,324 ft.

WOOD COUNTY

Atlati Royalty Corp.'s No. 1 J. B. Goldsmith, W. W. Lanier Sur., Abst. No. 358, 466 ft. from W line and 566 ft. from N line of 693.3-ac. tract and survey, 3½ mi. NW of Quitman.
Coring 4,415 ft.

Southwest Texas Wildcats

(Continued from Page 62)

W. T. Shoemaker's No. 1 M. Rocha, 150 ft. SW cor. of Carl Wenzel Sur., No. 139.
Abd. 3,860 ft.

GOLIAD COUNTY

Keystone Royalty Co.'s No. 1 M. Woods, SW part of county, 15,000 ft. from SW line, 5,000 ft. from NW line of J. Sherman Sur.
Drlg. 5,280 ft.

Turnbull & Irwin's (Walter Taber et al) No. 1 Handley, 370 ft. S, 100 ft. E of NE cor. of 2,400-ac. tract, in Daley Sur.
Drlg. 4,456 ft.

GONZALES COUNTY

Research Prod. Co.'s No. 1 Lanbeck, 708 ft. from NW line, 1,919 ft. from SW line, J. M. Salinas Sur.
Moving in material.

GUADALUPE COUNTY

Bob Gode et al's No. 1 Hicks, 1,320 ft. from E line, 150 ft. from S line of 189-ac. tract in Santo Y. Coy Sur.
Drlg. 300 ft.

A. D. Locke's No. 1 Lowman, 210 ft. from SE and SW lines of 2,500-ac. tract in C. Campbell Sur.
T.D. 1,810 ft.; S.D.

Mineral Oil Corp. of Texas' No. 1 Allen Phillips, 162 ft. from N line, 900 ft. from E line of tract, Cortinos Sur.
S.D. 858 ft.

W. A. Scrutchin's No. 1 A. H. Smith, 150 ft. from E line, 1,350 ft. from N line of 34.5-ac. tract, Jas. B. Cowan Sur.
S.D. 550 ft.

J. S. Suttle's No. 2 Baensiger, S of Seguin. Old well; R.U. to W.O.
Suttle et al's No. 1 Baensiger, 700 ft. from S line, 500 ft. from E line of 125-ac. tract, Monsola Sur.
T.D. 2,153 ft.; knocking out bridge.

W. J. Walton's No. 2 Zaberoski, 150 vrs. (500 ft.) SW of No. 1, 190.8 vrs. (630 ft.)

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Wichita Falls, Texas—Tel. 2-4307—W. E. (Bill) Norton
Luling, Texas—Tel. 365—J. G. High
Breckenridge, Texas—Tel. 206—P. W. Pitzer, C. K. West, C. F. Hogan, G. R. Whitney

S of Guadalupe River, 225-ac. tract, J. D. Clements Sur. No. 14.
1,750 ft.; no report.

HIDALGO COUNTY

Biuff Pet. Co.'s No. 1 Porcion Land Co., 330 ft. from N and E lines of NE 100 acres of S 500 acres of Share 14, Por. 49.
Drlg. 2,200 ft.

E. A. Davis' No. 1 Flores, 65 ft. from N line, 25 ft. from W line, Tract 312, Porcion 38.
S.D. 2,784 ft.; sand 2,757-77 ft.

Downey & Morton's No. 1 Daskom, 450 ft. from E line, 55 ft. from S line of Blk. 24, Por. 45.
T.D. 4,415 ft.; recmtng.

Nedler & Graham's No. 1 Oscar Daskam, center of Blk. 42, Porcion 45.
Derrick wrecked.

JIM HOGG COUNTY

Darby Pet. Co.'s No. 1 Holbien, 330 ft. out of SW cor. of Lot 57, Sur. 5, Los Animas grant.
Drlg. 2,980 ft.

Miller & Pippin's No. 1 Yeager, 527 ft. S line, 150 ft. E line of Blk. 6, Sur. 20.
Fishing 3,530 ft.; no report.

A. W. Phillips' No. 1 Allen, 660 ft. from S and E lines of Blk. 293, Pippin Subd. of the Randado grant.
Moving in material.

Sun Oil Co.'s No. 1 L. R. Brooks, 7,500 ft. from N and W lines of tract, Santo Domingo de Abajo grant.
Drlg. 2,475 ft.

JIM WELLS COUNTY

Sunray Oil Co.'s (A. M. Hagan) No. 1 Robert Adams, 330 ft. N and E of SW cor. Sec. 10, M. Ruiz Sur.
R.U.; completing wtr. well.

Smith & Story's (Maer & Shira) No. 1 Schaefer, 1,320 ft. E of NW cor. center of Blk. 15, of subdivision of ranch.
S.D. 5,502 ft.

KARNES COUNTY

Jim Kendrick's No. 1 Radford, J. Pointevent Sur. on the Seegter tract.
Coring 3,665 ft.

W. C. McBride's No. 1 Boultinghouse, 643 ft. from SE line, 618 ft. from SW line of J. S. Menefee Sur.
Drlg. 1,320 ft.

Harry Sample's No. 1 Seeger, 330 ft. from W line, 330 ft. SW of road, J. Pointevent Sur.
Abd. 3,000 ft.

R. G. Tonkin's No. 2 Henke, 3,670 ft. from SW cor., 330 ft. from W line (location changed).
Location site cleared and pits completed.

KENDALL COUNTY

J. E. Freeman's No. 1 J. M. Gerfers, 1,200 ft. out of SW cor. of 119-ac. tract, Mark Hodgson Sur., Sec. 796.
100 ft.; no report.

KERR COUNTY

Emerald Oil Co.'s (Meteor Oil Co.) (Edminton & Walker) No. 1 Whitworth, 1,160 ft. from S line and 1,333 ft. from E line of Sec. 1,439 of the H.E.W.T. Sur.
S.D. in lime 800 ft.

G. F. Schreiner et al's No. 3 Jeff Love, 1,500 ft. SE of No. 1 and 1,530 ft. from SE cor. and 300 ft. from N line of Sec. 1,591.
T.D. 5,625 ft.; porous lime; S.W. 5,622-25 ft.; S.D.

KLEBERG COUNTY

Parr & Ponder's No. 1 Sam Michalk et al. 5 miles SE Kingsville.
S.D. 1,050 ft.

LASALLE COUNTY

Killingsworth Oil Co.'s No. 1 Yeager, Sur 94.
T.D. 2,012 ft.; sand 1,499-1,710 ft.; cmtd. csg.; standing.

LEE COUNTY

Jas. E. Pederson's No. 1 Turner, 1,860 ft. from N line, 150 ft. from E line of tract, David Hudson Sur.
Abd. 6,560 ft.

Scharbach & Stowe's No. 1 Robert Otto.
Sand 2,450 ft.; small show oil; standing.

LIVE OAK COUNTY

Henderson Coquat's No. 1 Reagan, McGloin Sur., E of Nueces River and S of Oakville.
S.D. 1,560 ft.

Henderson Coquat's (Luling O. & G. Co.) No. 1 Rex, 330 ft. from SE and SW lines of 629-ac. tract, C of SW¼ of G.H.&H. Sur., Abst. 197, 3 miles S of Mileska.
T.D. 5,502 ft.; abd.

Lefevre, Spice & Feltner's No. 1 Carter Inv. Co. (Chappa ranch), 330 ft. from SW cor. NE¼ of Sec. 299, Hooper & Wade Sur.
Coring 4,150 ft.

Ray Nixon's No. 1 Chamberlain, 150 ft. from E line, 950 ft. from N line of Sec. 174, William Hill Sur.
Location.

J. O. Whittington's No. 1 Little, 1,320 ft. NE of S cor. of M. M. Shipp Sur., 330 ft. N of S line.
Abd. 5,759 ft.

McMULLEN COUNTY

John O. Gibson's No. 1 Mexur & McDowell, 330 ft. from N and W lines, Sec. 19, Blk. 4, H.T.&B. Sur.
S.D. 505 ft.

J. O. Gibson's No. 1 G. C. West (Lowe), 150 ft. E line, 1,200 ft. S of NW cor. of Lot 1, Blk. 4, H.T.&B. Sur.
S.D. 465 ft.

Henderson Coquat's No. 1 Essell, midway N and S lines, 2,000 ft. from SE line, D. R. Fant Sur.
T.D. 768 ft.; making gas; completing.

Howard & Carpenter's No. 1 Jungman, 1,020 ft. from E line, 950 ft. from S line, Holy Sur.
Testing 980 ft.; no report.

Chas. A. Hall's No. 1 B. C. Claunch, 368 ft. from N line, 160 ft. from E line of 25-ac. tract, Michael Haley Sur.
Location.

Loma Oil Co.'s No. 1 Dickinson, Sparks Sur., 880 ft. from E line, 880 ft. from NW line of Farm 13, 160-ac. tract, James Dickinson Subd. of McCowen ranch.
Coring 960 ft.

Points et al's No. 1 Fahler, 432 ft. S line, 319 ft. E line of tract, Byrna pasture.
Standing 785 ft.

C. C. Shumway's No. 3 Shiner, 330 ft. out of NE cor. of SE¼ of Sec. 53, C. C. Shumway Subd.
S.D. 1,650 ft.

MEDINA COUNTY

Joe Dupree's No. 1 Batto, 358 ft. from E line, 957 ft. from N line, J. Ball Sur. No. 1,478.
T.D. 410 ft.; S.D. to change cables.

O. L. Gates and H. W. Hill, Jr.'s No. 1 Odom, 800 ft. from W line, 600 ft. from N line of H. Castro Sur. 174.
Drlg. 115 ft.

W. T. Shoemaker's No. 1 Noonan, 52.5 ft. S 2 deg. 20 ft. E of old well, Sec. 349, M. Simon Sur.
T.D. 445 ft.; cmtd. 8-in. csg. 300 ft.; R.U. rotary.

REAL COUNTY

H. J. Heartwell et al's No. 2 Mrs. M. S. Perry, 250 varas from NW line, 775 varas from SW line of A.B.&M. Sur. No. 175.
2,220 ft.; no report.

SAN PATRICIO COUNTY

Masterson et al's (Tom Graham) No. 1 Wurzbach, 330 ft. from W line, 4,350 ft. from S line of C. C. Hornsby Sur.
Standing 5,521 ft.

STARR COUNTY

Accumulated Royalties' No. 1 Ferry, Lot 8, Blk. 2, B.&B. Subd., Por. 86.
S.D. 635 ft.

Armstrong, Emmanuel & Adams' No. 1 S.C. C.C., 330 ft. from S and E lines of Blk 57, Porcion 88-89.
T.D. 2,740 ft.; hole swbd. dry; P.B. to 2,240 ft.; to perforate.

C. R. Borah's No. 1 A. Guerra, San Jose grant, 330 ft. from N and 150 ft. from E lines of Sec. 6 (NE part of county).
S.D. 3,300 ft.

John H. Clopton's No. 1 Mrs. A. M. Kelsey-Bass, 2,950 ft. from W line, 3,610 ft. from E line of Porcion 88 in Porcion 86, Jurisdiction of Camargo.
Drlg. 2,000 ft.

Henshaw Bros.' (Sunray Oil Co.) No. 1 Sanches, 330 ft. from NE and NW lines of 40-ac. tract, Sur. 344.
Drlg. 2,600 ft.

Hiram Reed's No. 1 Block Bros., Tract A-28 Porcion 80, Blk. 4.
S.D. 1,540 ft.; oil sand 1,490-1,501 ft.

WEBB COUNTY

Mills Bennett's No. 1 Jesus Lopez, Jr., 2,500 ft. S line, 1,320 ft. W line of Sur. 72.
Sand 2,139-44 ft.; tested 160 ft. of oil; set csg.; W.O.C.

Arthur H. Wray's No. 1 Geo. Stuempke Share 1, Brewster pasture, Galan grant
S.D. 1,125 ft.; moving in electric rig; (corrected depth).

WILLACY COUNTY

W. T. Daniel's No. 2 Armendiaz, near Rio Hondo, 7,798 ft. from E and W lines of Share 14.
S.D. 3,770 ft.

Kingwood Oil Co.'s No. 1 Santa Rosa, Inc., 160 ft. from E line, 637 ft. from S line of Sec. 30, Blk. 16, Share 44, San Juan de Carricitas grant.
Drlg. 3,725 ft.

WILLIAMSON COUNTY

Fuchs & Walters' No. 1 S. Allmon, John Bevil Sur. No. 56, 150 ft. from SW line, 300 ft. most westerly SW line of 264-ac. tract.
Fishing 93 ft.; hole caving; S.D.

H. B. and Otto Glass' No. 1 Albert, 3 miles SE of Taylor.
Rigging up.

H. L. Goff et al's No. 1 Alberta Klotz, 1,700 ft. from N line, 150 ft. from E line of 100-ac. tract, W. Cartwright Sur.
S.D. 1,250 ft.; may drill to Edwards.

Hays et al's No. 1 Pfluger, 150 ft. from E line, 150 ft. from S line, White Sur.
S.D. 915 ft.

Rue et al's No. 1 Chas. Bachmayer, 6 miles SE Taylor.
Rigging up.

ZAPATA COUNTY

F. H. Crow et al's No. 1 Daniel Ysaguirre 330 ft. out of SW cor. Share 1, Porcion 14-15-16, D. Ysaguirre tract.
Coring 2,365 ft.

Danvers & Harrison's No. 1 D. A. McAskill, 660 ft. SE and SW lines, Blk. 51, Edwards Subd., Borrego grant.
Set and cmtd. csg. 20 ft.

Humble O. & R. Co.'s No. 1 Eulalie Dominguez, 12,785 ft. from NE line, 1,320 ft. SE line of Por. 31.
Rigging up.

Joe Palmer's No. 1 Emma A. Markrud, 150 ft. from NE and NW lines, Blk. 22, Sur. No. 616.
Rigging up.

Texas Royalty Investment Co.'s No. 1 N. J. Vela, 686 ft. from NE line, 300 ft. from NW line, Blk. 7, Por. 29.
S.D. 2,338 ft.

Southwest Texas Proven

Week Ending June 22

CARROLL—BASTROP COUNTY

Nelson Puett's No. 5 Carroll Estate, 1,926 vrs. (5,350 ft.) from NW line and 619.20 vrs. (1,720 ft.) from SW line of Andrew Mayes Sur. No. 19.
Shale 926 ft.; no report.

CEDAR CREEK—BASTROP COUNTY

J. E. Mills' No. 2 H. H. Lytton, 225 ft. NW line, 825 ft. SW line, 320 acres, J. A. Navarro Sur.
Shale 1,501 ft.; set csg.; W.O.C.

BATEMAN—BASTROP COUNTY

Batts & Jarnson's No. 1 Mrs. Anneta Harris, 576 vrs. (1,600 ft.) NW line, 630 vrs. (1,750 ft.) SW line, John Maxmillan Sur. 22.
S.D. 300 ft.

CAESAR—BEE COUNTY

El Toro Oil Co.'s No. 1 J. J. Grisson, 150 ft. from N and W lines of 10-ac. tract, P. B. Early Sur.
Spudded; no report.

McAlester Fuel Co.'s No. 2 W. J. Vaughn, 150 ft. from SE line, 200 ft. from SW line of 52.37-ac. tract, F. Lewis Sur.
3,000 ft.; no report.

Swiger et al's No. 4 Gardner, W offset to Vaughn producer.
Moving in material.

DIRKS—BEE COUNTY

Dirks Bros.' No. 4 Harris, 330 ft. S of N line, 660 ft. W of No. 2, J. L. Dugat Sur.
Rigging up.

Dirks Bros.' No. 4 Roth, 660 ft. E of No. 3, 330 ft. from N line, Sec. 7, J. M. Uranga grant.
Rigging up.

Dirks-Wrigntsman's No. 3 Roth, 330 ft. from N line, 990 ft. E of No. 2, Sec. 7, J. M. Uranga grant.
Sand 3,339-47 ft.; L.P. 30 bbls. per hr.

Dirks-McMurray's No. 3 R. C. Harris, 660 ft. SW of No. 1, 405 ft. NE of SW line of 44.64-ac., J. L. Dugat Sur.
Sand 3,878-85 ft.; completing.

L. A. Douglas' No. 1 Imogene Hall, 990 ft. from SE line, 330 ft. from SW line of 80 acres, T. J. Butler Sur.
Spudded.

Heyser Heard and Walton's No. 1 Young.
Drlg. 2,000 ft.

Heyser Heard and Walton's No. 2 Young.
Rigging up.

Humble O. & R. Co.'s No. 1 Shellenberger, E offset to Mills Bennett's No. 3-A Bassinger.
Drlg. 3,500 ft.

Home Oil Co.'s No. 3 Bassinger, 330 ft. from E line, 680 ft. due S of No. 2, Sec. 7, J. M. Uranga grant.
Abd. 3,903 ft.

Texas Co.'s No. 2 Young, 330 ft. from S line, 682 ft. due W of No. 1, Geo. Young Sur.
Drlg. 3,500 ft.

PETTUS—BEE COUNTY

L. T. Barrow's No. 2-A McKinney, S 65 deg. E 1,500 ft. from No. 2-A.
1,200 ft.; no report.

United Prod. Co.'s No. 50 Ray, approx. 2,100 ft. northwesterly from NW cor. of Pierce Miller Sur., thence 540 ft. southwesterly at R/A; also 4,825 ft. SE from NW property line of lease, Geo. A. Kerr Sur.
Drlg. 3,910 ft.

RAY—BEE COUNTY

Dirks Bros.' No. 3 Ray, 660 ft. E of No. 2 and W road to Pettus in SW¼ of Sec. 7.
Drlg. 1,800 ft.

L. W. Littlejohn's No. 1 J. B. Borroum, 150 ft. out of SW cor. of 234-ac. tract, Wm. Gell Sur.
Moving in material.

Magnolia Pet. Co.'s No. 1 Geo. Ray, 150 ft. from E line, thence 1,220 ft. from S along E line to NW line of survey, W. B. Blanchard Sur.
Rigging up; ready to spud.

TULETA—BEE COUNTY

Dirks Bros. et al's No. 1 Campbell, 150 ft. from NW line, 330 ft. from SW line of 20-ac. tract, Brooks & Burleson Sur.
T.D. 3,939 ft.; I.P. 265 bbls. per day; 5/16-in. choke; 425 lbs. T.P.; 675 lbs. C.P.

Highland Oil Co.'s No. 2 P. L. Campbell, 330 ft. from NW line and SW line of 40-ac. tract, W. B. Blanchard Sur.
Set csg.; sand 3,943-54 ft.

Jamison & Byron's No. 2 Campbell, Blanchard Sur.
2,120 ft.; no report.

Mills Bennett Prod. Co.'s No. 1-B C. W. Bassinger, 256 ft. from W line, 330 ft. from S line of SE¼ of NW¼ of Sec. 7, Ragley Subd., Uranga grant.
Derrick.

Leslie McKay's No. 4 Campbell, 330 ft. out of SW cor. of Brooks & Burleson Sur.
Drlg. 1,500 ft.

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Southwest Exploration Co.'s No. 1 Hayden & Bruckhan, C of farm tract, 330 ft. from N and W lines of Sec. 30, Uranga grant.
Rigging up.
Stanolind O. & G. Co.'s No. 2 Walton, 660 ft. S of No. 1.
Spudded.
Texas Co.'s No. 2 Young, 330 ft. from S line, 682 ft. due W of No. 1, 379.95-ac. tract, Geo. Young Sur.
Drlg. 3,500 ft.
Wrightsman Oil Co.'s No. 1 Kimball, 1,200 ft. from NW line, 1,500 ft. from NE line, S. Winship Sur.
Sand 3,536-42 ft.; well put on pump.

DORBOWOLSKI—BEXAR COUNTY

D. C. Pegg and B. Miller's No. 7 Katie Strunk, 391 ft. from SW line and 304 ft. from NE line, 139.65-ac. tract, Juan Montez Sur.
Rig.

VON ORMY—BEXAR COUNTY

T. and C. Owens' No. 1 Trawalter, 150 ft. W of river, 150 ft. from S line of tract No. 15, A. G. Trawalter Subd.
Spudded; no report.
Joe H. Parker's No. 1 James McClosky, 1,500 ft. N line, 475 ft. W line, F. A. Desafire Sur. No. 134.
Drlg. 510 ft.
A. J. Trawalter's No. 11 fee.
Moving in material.

BRUNER—CALDWELL COUNTY

Dawn Oil Corp.'s No. 2 Floyd Tiller.
Derrick.

DUNLAP—CALDWELL COUNTY

R. S. Boling's No. 2 C. F. Robertson, 575 ft. along Plum Creek from SW cor. of tract, 150 ft. from creek, John Neill Sur.
Spudded.
O. B. Cunningham's No. 1 J. M. Pierce, 150 ft. from S and W lines of tract in S. Seale Sur.
Testing 2,269 ft.
Exploration Co.'s (F. Meyers) No. 1 W. T. Mooney, 810 ft. from S line, 450 ft. from W line of 95-ac. tract, S. Seal Sur.
Show oil 2,150 ft.; setting csg.
Bellard & Whiting et al's No. 1 Mrs. A. C. Bridges et al, 650 ft. from NW line, 450 ft. from NE line of Soloman Seal Sur.
Shale 635 ft.; no report.
W. T. Walker's No. 3 Walker, 330 ft. SE of No. 2.
Drilling.

DRISCOLL—DUVAL COUNTY

Continental Oil Co.'s No. 5-A Robert Driscoll, 4,500 ft. W of E line hence 3,500 ft. at R/A along E line to N line of Sec. 23, in Sec. 443.
Running screen and liner 2,905 ft.

GOVERNMENT WELLS POOL—DUVAL COUNTY

Georgia F. Hill's No. 1 W. J. Nester, 357.33 ft. from E line, 353.55 ft. from S line of SE¼ of NE¼ of Sec. 47.
T.D. 2,276 ft.; comp. as gas well; 400 lbs. pressure.
Kane Prod. Co. et al's No. 1 Peters, 990 ft. W line, 330 ft. N line of SE¼ of Sur. 176.
Drlg. 2,574 ft.
Magnolia Pet. Co.'s No. 2 Loffler, 946 ft. S line, 330 ft. E line of SE¼ of Sur. 47.
Sand 2,255-62 ft.; W.O.C.
Magnolia Pet. Co.'s No. 2 Hahl, 330 ft. from N line, 1,395 ft. W of No. 1, 640-ac. tract, Sec. 67, C.C.S.D.&R.G.N.G. Sur.
Sand 2,718-37 ft.; I.P. 75 bbls. per day.
Magnolia Pet. Co.'s No. 46 D.C.R.C., 2,310 ft. from W line, 2,970 ft. from S line of Sur 208, 660 ft. due W of No. 45, 660 ft. due N of No. 30, 1,120-ac. tract, J. Poitevent Sur.
T.D. 2,337 ft.; I.P. 40 bbls. per day on pump.
Magnolia Pet. Co.'s No. 1 Riggs, 330 ft. from N and W lines of NE¼ of NE¼ Sur. 46.
Pulling tubing, 2,353 ft.
Magnolia Pet. Co.'s No. 12 Riley, 990 ft. W line, 1,650 ft. S line of SW¼ of Sur. 45, 660 ft. due W of No. 5, 660 ft. due N of No. 11, J. Poitevent Sur.
Sand 2,189-93 ft.; coring 2,243 ft.; no report.
Parr Oil Corp.'s No. 3 R. E. Glover, 330 ft. from N and E lines of SE¼ of SE¼ of Sec. 44, J. Poitevent Sur.
Location.
Seaport Oil Co.'s (L. W. Capps) No. 7-A D.C.R.C., 225 ft. SW line, 1,640 ft. NW line, Sur. 574.
Drlg. 1,850 ft.
Simpson-Fell Oil Co. et al's No. 8 L. B. Moody, 990 ft. from N line, 330 ft. from E line of 100-ac. tract, G.B.&C.N.G. Sur. No. 60.
W.O.C. 41 ft.
E. R. Thomas' No. 1 C. W. Hahl, 330 ft. out of SE cor. of 165.5-ac. tract, SE¼ of Sec. 63, J. Poitevent Sur.
Drlg. 2,450 ft.

SARNOSA—DUVAL COUNTY

Sun Oil Co.'s No. 19 Cuellar Motor Co., 990 ft. SE line, 1,650 ft. NE line of E½ of Sur. 576.
T.D. 2,411 ft.; I.P. 125 bbls. per day on pump.

HOFFMAN—DUVAL COUNTY

Bridwell's (Sun Oil Co.) No. 1 J. D. Sutherland, 330 ft. S line, 330 ft. E line of W½ of Sur. 122.
Location.
Bridwell Oil Co.'s No. 3 Sutherland, 1,650 ft. from E line, 990 ft. from S line, of E½ of Sur. 122.
Abd. location.

LOMA NOVA—DUVAL COUNTY

Al Buchanan's No. 5 Ruis, 660 ft. due W of No. 3, 660 ft. due N of No. 2, 162-ac. tract, Sec. 75, J. Poitevent Sur.
T.D. 2,685 ft.; I.P. 197 bbls. per day; ½-in. choke.
Duval Oil Corp.'s No. 1 L. B. Moody, 330 ft. out of NE cor. of 40-ac. tract, Sec. 74.
Drlg. 2,010 ft.
Duval Oil Co.'s No. 1 Hubbard, Morris & Cummings Sur., Sec. 77, 330 ft. out of NE cor. NE¼ section.
Rigging up.
Humble O. & R. Co.'s No. 1 Hubbard, B.S. &F. Sur. No. 84, 330 ft. from S line, 810 ft. from E line of 320-ac.
Running screen 2,817 ft.
Humble O. & R. Co.'s No. 2 Welder, 330 ft. from W line, 660 ft. from S line of 250.8-ac., Sec. 73, S.K.&K. Sur.
Swbng. 2,698 ft.
Humble O. & R. Co.'s No. 5 G. Ruiz Est., 1,497.4 ft. S of No. 4, 1,722 ft. W of No. 2, 330 ft. out of SW cor. of 640-ac., Sec. 553, B.S.&F. Sur.
T.D. 2,775 ft.; completing.
Rosen Oil Co.'s (Johnson) No. 2 Hubbard, 330 ft. from NW cor. of SW¼ of Sur. 48.
Spudded.
Shell Pet. Corp.'s No. 1 Mrs. M. C. Hubbard, 2,196 ft. from S line, 330 ft. from E line of 320-ac. tract, Sur. 77.
Rigging up.
Stieren Oil Co.'s No. 2 Wright, Sur. 72.
T.D. 2,704 ft.; I.P. 16 bbls. per hr.
E. R. Thomas et al's No. 1 C. W. Hahl, J. Poitevent Sur., Sec. 63, 330 ft. out of SE cor. of SE¼ section.
D.S. test in sand at 2,626 ft. showed 15 thribbles of oil in 18 min.; setting csg.

SEVEN SISTERS—DUVAL COUNTY

Dulce Oil Co. and Henderson & Harvey's No. 1 Serna, 150 ft. from E line, 330 ft. from N line of NW¼ of Sec. 384.
S.D. 2,122 ft.
Humble O. & R. Co.'s No. 1 Serna, 2,310 ft. from W line, 330 ft. from S line, Sur. 384.
Spudded.
Humble O. & R. Co.'s No. 1 Bank of Fredericksburg (Wright), 1,645 ft. from S line, 990 ft. from E line, Sur. 382.
Derrick.
Humble O. & R. Co.'s No. 1 Smith, 990 ft. from NW line, 330 ft. from E line of 631.7-ac. tract, Sec. 382, B.S.&F. Sur.
Drlg. 1,850 ft.
Santa Clara Oil Co.'s No. 2 J. F. Welder heirs, 330 ft. from N line, 990 ft. from E line, 660 ft. due W of No. 1, Sec. 385, J. Poitevent Sur.
Drlg. 1,400 ft.

PEARSALL—FRIO COUNTY

Amerada Pet. Corp.'s No. 1 Kathman, 500 ft. from N and W lines of B. L. Crouch Sur.
Drlg. 1,795 ft.
Amerada Pet. Corp.'s No. 1 W. H. Smith et al, 4,500 ft. from NE line, 1,650 ft. from SE line, Joseph V. Mason Sur. No. 322.
Drlg. 5,360 ft.

LULING—GUADALUPE COUNTY

Grayburg Oil Co.'s No. 14 McKean, 700 ft. from No. 13, Cottle Sur.
T.A. 1,854 ft.
Grayburg Oil Co.'s No. 15 McKean, 200 ft. from NW line, 150 ft. from SW line, H. Cottle Sur.
Drlg. 1,860 ft.

DARST CREEK—GUADALUPE COUNTY

Texas Co.'s No. 2 Posey (workover).
Old T.D. 2,606 ft.; set 7-in. csg. at 2,575 ft.; T.D. of sidetracked hole 2,583 ft.

DINERO—LIVE OAK COUNTY

Marine Oil Co.'s No. 1 Adair, 330 ft. from N and W lines of 366-ac. tract in J. McGloin Sur.
S.D. 5,348 ft.

LUCAS—LIVE OAK COUNTY

Houston Oil Co.'s No. 32 Cartwright, 1,124 ft. N of No. 31, Trudo Sur.
S.D. 6,787 ft.

McNEILL—LIVE OAK COUNTY

Lion Oil Ref. Co.'s No. 5 P. E. McNeill, 330 ft. from NW line, 1,350 ft. from SE line of G.H.&H. Sur. in Jane Curry Sur., Blk. 9. Location.
Darby Pet. Co.'s No. 1 McNeill, 330 ft. out of NW cor. of 116-ac. lease, 1,200 ft. SE of Lion's No. 1.
Drlg. 5,202 ft.

THREE RIVERS—LIVE OAK COUNTY

Benco Oil Corp.'s No. 1 E. Mahoney, 155 ft. from NW line of J. H. Harvey tract, 3,109 ft. SW of highway in Mark Killelly Sur.
Spudded; S.D.
Turner & Walker's No. 1 C. F. Simmons, 50 ft. from N line, 300 ft. from W line, Farm Tract 513, Blk. 12, S. Hayes Sur.
Rigging up.

SAM FORDYCE—HIDALGO COUNTY

Ben G. Barnett et al's No. 2 Missouri Pacific, 1,666 ft. E of W line of right of way.
T.D. 2,752 ft.; I.P. 100 bbls. per day.
Cortes Oil Co.'s No. 2-C Smith, 230 ft. from N line, 690 ft. from W line of NE 40 acres of Tract B-3, Porcion 41.
Location.
Cortez Oil Co.'s No. 3-C Smith, 230 ft. from N line, 1,150 ft. from W line of NE 40 acres of Tract B-3, Porcion 41.
Location.
Cortez Oil Co.'s No. 1-C Smith, 230 ft. from N and W lines of NE 40 acres of Tract B-3, Porcion 41.
T.D. 2,755 ft.; killed to D.D.; S.D.
Double D. Oil Co. and Harrison's No. 2 Lula George, 230 ft. from W line, 690 ft. from S line of SW 40 acres of Tract 13, Porcion 41.
S.D. 2,952 ft.
Harrison et al's No. 2 (4) Guerra, 330 ft. from S and E lines of S 40 acres of Share 12, Porcion 41.
S.D. 1,500 ft.
W. F. Lacy's No. 1 V. R. deFlores, 75 ft. from N line, 107 ft. from E and W lines, Blk. 266, Porcion 38.
C.O. at 2,739 ft.
H. J. Porter's No. 2 C. E. Smith, N end of 8½ of tract in Tract 278, Porcion 40.
Spudded; S.D.

MERCEDES—HIDALGO COUNTY

Union Sulphur Co.'s No. 4 A.R.G.L.&I.C., 400 ft. N and W lines, Lot 1, Blk. 99, 1½ miles SW discovery well.
Moving in rig.
Union Sulphur Co.'s No. 1 American Rio Grande L. & I. Co., 400 ft. S and W of NE cor. of Lot 229, Blk. 59 (W.O.).
T.D. 6,431 ft.; cutting out D.S.
Union Sulphur Co.'s No. 2 American Rio Grande L. & I. Co., 400 ft. S and E lines of tract, Blk. 86, Capisallo district (W.O.).
T.D. 3,044 ft.; drlg. 5,010 ft. in sidetracked hole.

SANDIA—JIM WELLS COUNTY

Magnolia Pet. Co.'s No. 6 Seeligson, 660 ft. W, 330 ft. S of No. 3, Canales Sur. No. 20.
S.D. 6,010 ft.; (corrected depth).
O. W. Killam's No. 7 Wade, 1,320 ft. SE of No. 4, 200 ft. from NW line, 225 ft. from NE line, Lot 1, Blk. C, Lopez de Jean grant.
Rigging up.

WEINER—KENDALL COUNTY

Southwestern Dev. Co. Synd., Ltd.'s No. 1 W. G. Werner, 1,645 ft. from N line, 765 ft. from NW line of 320-ac. tract, J. F. Torrey Sur. No. 781.
Spudded.

KINGSVILLE—KLEBERG COUNTY

Ray Clark's No. 1 House, Lot 5, Blk. 37, K.T.&I. Co. Sur.
S.D. 1,000 ft.
Fidelity Exploration's No. 1 Paul O. Henry, 150 ft. from N line midway E and W lines of Blk. 2, Sec. 49, K.T.&I. Sur.
Set surface csg. 304 ft.; no report.
Fidelity Exploration Synd.'s No. 1 Vivian Kivlin, Sec. 4, Blk. 39, K.T.&I. Sur. on Vivian Kivlin lease.
Derrick up.

JACOB POOL—McMULLEN COUNTY

Inland Oil Co.'s No. 3 Lark, 150 ft. from W line, 1,285 ft. from N line, Blk. 133, Scrugham Sur.
Rigging up.
Loma Oil Co.'s No. 2-W L. Jacob Corp., 220 ft. from E line, 1,320 ft. due N of No. 1-W, W. D. Benham Sur.
T.D. 925 ft.; S.D.
M. E. Young's No. 8-A Cox, E of Frio River across line from Lark tract in M. Hely Sur. (old well).
Sand 1,070 ft.; no report.

LOMA ALTA—McMULLEN COUNTY

Darby Pet. Corp.'s No. 1-C Hagist, 330 ft. out of NE cor. of 20-ac. tract, in Sec. 108, R. W. Mills Sur.
Set surface csg.
Illinois Pet. Co.'s No. 2-A Ellen Atkinson, 330 ft. from S line, 660 ft. due E of No. 1-A, Sec. 13, Martha J. Deen Sur.
Set surface csg.

TAYLOR—MEDINA COUNTY

Callahan & Robert's No. 1 Ray Taylor, 1,450 ft. NS line, 220 ft. EW line, Sur. No. 135.
Spudded; S.D.

ANGELITA—SAN PATRICIO COUNTY

Continental and Atkins & O'Neal's No. 3 Welder, 466 ft. from S line, 150 ft. W of SE cor. of Anthony tract, J. Hart Sur.
T.D. 5,410 ft.; running D.S. test; top sand 5,394 ft.

SINTON—SAN PATRICIO COUNTY

Conroe Drlg. Co.'s (Heep) No. 1-D Welder, N of Sinton.
4,300 ft.; no report.
Heep Oil Corp.'s No. 3-E Welder, 466 ft. from E line, 933 ft. due S of No. 2-E, N 400 acres of Sec. 46, R. Montgomery Sur.
Spudded.
Heep Oil Corp.'s No. 2-E Welder, 466 ft. from E line, 1,399 ft. from N line, 933 ft. due S of No. 1-E, N 400-ac. of Sec. 46, R. Montgomery Sur.
Drlg. 2,100 ft.
Magnolia Pet. Co.'s No. 1 Corpus Christi Bank, 330 ft. E from river, thence 330 ft. at R/A, 9,300 ft. SW of Heep's No. 1 Welder, H. H. Hunter Sur.
Spudded.
Plymouth Oil Co.'s No. 5-C Welder, 933 ft. N of No. 1-E Welder of Heep.
Set surface csg.
Plymouth's No. 6-C Welder, 933 ft. S of No. 4-C.
Rigging up.
Plymouth Oil Co.'s No. 7-C Welder, 933 ft. W of No. 5-C.
Building derrick.
Plymouth Oil Co.'s No. 4-C Welder, E offset to Heep's No. 1-E.
Drlg. 2,175 ft.
Plymouth Oil Co.'s No. 2-C E. H. Welder, 2,000 ft. from N line, 630 ft. from E line, Sec. 49, Subd. No. 1 of Eliza H. Welder ranch.
T.D. 5,636 ft.; made gas; recmtng.
Plymouth Oil Co.'s No. 3-C E. H. Welder, 744 ft. from N line, 2,000 ft. from E line, Sec. 49, Subd. No. 1, E. H. Welder ranch.
Drlg. 5,840 ft.
Plymouth Oil Co.'s No. 1-D E. H. Welder, 466 ft. from N line, 466 ft. SE of Ry., Sec. 1, Subd. No. 1, E. H. Welder ranch.
Drlg. 5,950 ft.
Violet Oil Co.'s No. 1 Welder, 1,399 ft. from W line, 466 ft. from N line of 200-ac. tract, Sec. 47, Isaac Clover, Sur.
Rigging up.

LOS OLMOS—STARR COUNTY

H. L. Curry's No. 2 Bass, 660 ft. from S line, 1,335 ft. from E line of 640-ac. tract, Sec. 8, Porciones 75, 76 and 77.
S.D. 1,250 ft.
Ed Linberg's No. 7 Bass, 1,500 ft. from W line, 1,675 ft. from N line of Share 6, Porcion 75.
S.D. 500 ft.

PLACETAS—STARR COUNTY

Hughston Oil Co.'s No. 1-A Gregg-Wood, S end of Por. 84; replacement well, 990 ft. S of State Highway No. 4.
S.D. 2,340 ft.

RIO GRANDE—STARR COUNTY

Hiram Reid's No. 3 D.&C., 150 ft. from S and E lines, Blk. 3, Tract 21, Por. 81.
Rigging up.
Hiram Reed's No. 2 D. & C., 480 ft. from S line, 175 ft. from E line, Blk. 6, Tract 21, Porcion 80.
T.D. 1,384 ft.; I.P. 100 bbls. per day.
W. W. Zimmerman's No. 1 Doyno, 150 ft. from S line, 822 ft. from W line of 40-ac. tract, Lot 1, of Share A-77, Por. 81.
Spudded.

SAXET—NUECES COUNTY

Benedum & Trees' No. 1 Stillwell, 330 ft. from W line, 629 ft. from N line, Blk. 31, T.A. 996 ft.
Houston Oil Co.'s No. 4 Morgan, 660 ft. E of No. 3, Sec. 7, Range 5.
Location.
Houston Oil Co.'s No. 4 Walton, 330 ft. EW line, 1,560 ft. NS line.
Drlg. shale and lime 2,933 ft.
Magnolia Pet. Co.'s No. 2 W. W. Walton, 330 ft. from E line, 289 ft. from S line of 92.11-ac. tract, Enrique Villareal Sur.
Location.
Southern Minerals' No. 1-A Rand Morgan, Roberts Sur.
5,650 ft.; no report.

BRUNI-WEBB COUNTY

Associated Oil Co.'s No. 5 Bruni, 2,310 ft. SW line, 330 ft. NW line of 500-ac. tract, Sur. 6-7, Arispe grant.
Sand 3,383-88 ft.; testing.
Associated Oil Co.'s No. 3 A. M. Bruni, 660 ft. N of No. 2, 330 ft. from W line, 6,000-ac. tract, Blk. 7, M. Arispe grant.
Location.
Highland Oil Co.'s No. 8 Bruni, 1,650 ft. from NW line, 330 ft. from NE line, Sur. 7.
Coring 3,407 ft.; had sand 3,387-94 ft.; no report.
Highland Oil Co.'s No. 10 A. M. Bruni, 949 ft. NE of No. 3, 506 ft. SE of No. 4, 202.4-ac. tract, M. Arispe grant.
Sand 3,397-3,403 ft.; I.P. 15 bbls. per hr.
Highland Oil Co.'s No. 12 A. M. Bruni Estate, 520 ft. E of No. 6, 330 ft. from S line of 200-ac. tract, M. Arispe grant.
Location.
O. W. Killam's No. 38 Bruni, 330 ft. from NW line, 800 ft. from SW line of M. Arispe grant No. 6.
Drlg. shallow gas sand 1,500 ft.

LAUREL—WEBB COUNTY

South Texas Oil Co.'s No. 1 Laurel Bros., 100 ft. from E line, 200 ft. from S line of Sec. 269, Blk. 2, C.C.S.D.&R.G.N.G. Sur.
Rebuilding derrick.

WEST COLE POOL—WEBB COUNTY

Allison et al's No. 1 Moses Jones, 330 ft. S and E lines of NE 100 acres, Sur. 1,640.
Repairing pump at 710 ft.
Ross Amigos' No. 1 Garcia, 450 ft. from E line, 1,250 ft. from N line of Sur. No. 2,168.
Abd. 1,900 ft.
Ross Barnhart's No. 1 de la Garza, 1,500 ft. from N line, 200 ft. from E line of Sur. 262.
T.D. 2,406 ft.; set csg.
Magnolia Pet. Co.'s No. 10-A Benavides, 150 ft. from N line, 300 ft. W of No. 8, 280-ac. tract, S.K.&K. Sur. No. 660.
Sand 2,345-55 ft.; I.P. 50 bbls. per day on pump.
Magnolia Pet. Co.'s No. 1X-S Benavides, 313 ft. from NE and SW lines, 347 ft. from NW and SE lines, M. E. Hale Subd. No. 185.
Coring 2,596 ft.
Magnolia Pet. Co.'s No. 3 S. S. Benavides, 200 ft. from N and W lines of Sec. 696, B.S.&F. Sur.
Location.
Frank Smith's No. 1 Moses Jones, 2,150 ft. E line, 2,350 ft. S line, Sur. 1,640.
Drlg. 350 ft.

NOACK—WILLIAMSON COUNTY

Coffield & Lanning's No. 3 Heap, 200 ft. from N line, 225 ft. from W line of tract in White Sur.
Location.
R. R. Ogden's No. 1 Matteck, 150 ft. N and W lines of 108.5-ac. tract in White Sur.
Location.
W. L. Stephens' No. 1 J. P. Carlson, 200 ft. out of NW cor., 900 ft. SE line, 610 ft. SW line of Samuel C. Jones Sur.
Drlg. 460 ft.

BYERSVILLE—WILLIAMSON COUNTY

H. T. McGee's No. 1 A. J. Heal, 2,100 ft. from SW line, 3,250 ft. NW line, P. Cartwright Sur.
Drlg. 1,104 ft.
Elmer Rule et al's No. 1 Bachmeyer, Cartwright Sur., 450 ft. from NW line, 150 ft. from NE line, 70.1-ac. tract.
Moving in material.
Stone & Gabehart's No. 1 Wernli, 150 ft. from S and E lines of tract, P. Cartwright Sur.
Standing 450 ft.
Taylor Ref. Co.'s No. 9-A Sladek, H. White Sur., 150 ft. from NE line, 1,200 ft. SE line (creek).
Shale 700 ft.; no report.

BLAS URIBE—ZAPATA COUNTY

O. W. Killam's No. 3 Bruni, 5,897 ft. from NW line, 2,386 ft. from NE line of Borrocitio pasture, J. V. Borrego grant.
Abd. 357 ft.
O. W. Killam's No. 10 Bruni, 450 ft. from SW line, 150 ft. from NW line of Blk. 60, Borrego grant.
Abd. 1,525 ft.
Martinez, Eravi & Daniels' No. 1 A. M. Bruni, 150 ft. from SE line, 750 ft. from NW line of 40-ac. tract, Blk. 44, Blas Uribe Sur. No. B-8.
Spudded.

ESCOBAS—ZAPATA COUNTY

Kleiner & Hill's No. 12 Jose Gutierrez, 393.9 ft. from NW line, 172 ft. from NE line, Share 4, Pansier Parti. of Las Comitas grant.
Sand 1,221-28 ft.; W.O.C.

LOPENA—ZAPATA COUNTY

Gem Oil Co.'s No. 1 Ramirez, 330 ft. from NW and SW lines of Share 13, Por. 17, J. C. Ramirez grant.
Coring hard sand with show of oil at 2,200 ft.
Trowel et al's No. 1 W. Z. Guerra.
Coring brittle shale 1,790 ft.; no report.

MIRANDO VALLEY—ZAPATA COUNTY

C. L. Smith's No. 1 Robert Hinnant, 330 ft. out of NW cor. Sec. 307, Blk. 27, P. M. Makeig Sur.
Coring 1,810 ft.

Topeka Lime Well in Russell County Is Opened and Proves Big Producer; Rice Extension

By JAMES McINTYRE

The past week in Kansas saw the completion of a comparatively few wells. The new work greatly outnumbered the completed work. A considerable number of wells were in the pay but will not be on the completed list until next week's review.

The Gypsy Oil Co. got a good well in its No. 1 Smith, SE SE SE Section 16-20-9w, in Rice County, about 2½ miles southeast of Chase. It pumped 1,488 bbls. in 24 hours after an acid treatment in Siliceous lime at 3,322-37 feet. It was not classified as a wildcat but it is an extension well.

Darby Petroleum Co.'s No. 1 Kultgen, C SE NE NW Section 16-16-12w, in Barton County, produced 805 bbls. in 24 hours on the pump from Siliceous lime at 3,341½-42 feet, total depth.

Eldorado Refining Co.'s No. 1, C SE SE NW Stang, Section 36-17-17w, in Rush County, had Siliceous lime at 3,485 feet and set 8-inch casing at 3,498 feet. It had a gas showing at 3,505-10 feet, an oil showing at 3,515 feet, more gas at 3,543-46 feet and more oil at 3,555 feet. It was drilled to 3,570 feet and was being held up by a fishing job.

Tom Palmer has a failure in his test on the Bender farm, SE SE NW Section 16-13-14w, in Russell County. It was a hole full of water from Siliceous lime at 3,270-3,345 feet.

Hartman & Blair's Topeka lime producer in Section 2-14-15w, in Russell County, which created a great deal of interest earlier in the year when it came in for 4,076 bbls. initial production from a new producing formation in Russell County, has been shut in preparatory to building a 55,000-bbl. tank. It was opened this week and flowed 2,004 bbls. in 12 hours.

Kansas Production

Estimated daily average production of Kansas for the week ended June 22 and for the preceding week follows:

	Barrels	
	June 22	June 15
Burrton	23,200	24,125
Ritz-Canton	7,500	7,775
Hollow	3,825	3,825
Voshell	4,850	4,850
Johnson	1,217	1,310
Nikkell	3,600	3,650
Sedgwick County	8,875	8,900
Ellsworth County	6,060	5,185
Barton County	2,200	2,410
Rice County:		
Chase Pool	17,625	15,900
Remainder	7,022	8,100
Ellis County	890	420
Kingman County	885	850
Stafford County	1,651	2,180
Russell County	11,800	12,540
Greenwood County	11,100	11,100
Butler County	18,500	18,100
Other pools	17,525	17,655
Total Kansas	148,325	148,875

Russell County

Buffalo Oil Co.'s No. 5 Schaffer-Anschutz, SW cor. Section 27-13-14w, in the Russell Pool, Russell County, made a potential production of 288 bbls. of oil and about 3 bbls. of water from Siliceous lime at 3,271-3,310 feet, total depth 3,315 feet, but plugged back 5 feet. It was completed.

Hartman & Blair's No. 1 Rouback-B, SE NE NW Section 2-14-15w, was completed in Oswald lime at 3,066-3,112 feet. It made a potential of 312 bbls. of oil, but with 50 bbls. of water.

Phillips Petroleum Co. abandoned the location for No. 3 Holland, NE SW SW Section 13-14-15w.

Wolf Creek Oil Co. and others completed a failure in their No. 1 Penn Mutual, SW cor. Section 22-15-15w, a wildcat. It had Siliceous lime at 3,475 feet, a hole full of water at 3,504 feet and was bottomed at 3,509 feet. It was abandoned.

Central Petroleum Co. had rig up for No. 1 Ginther, 440 feet from S and W lines of SE¼ Section 19-12-15w. Coraleana Oil Co. was moving in material for No. 1 Flegler, SE SE SE Section 11-15-14w, a wildcat.

Hartman & Blair's No. 1 Cook, NE cor. Section 26-13-15w, stood at 3,331½ feet with 500 feet of fluid in the hole. Siliceous lime was topped at 3,317 feet.

J. C. Shaffer, Inc.'s No. 1 Cram, NE NE SE Section 11-14-15w, had Siliceous lime at 3,298-3,305 feet, total depth, and 3,000 feet of fluid rose in the hole.

Texas Co.'s No. 1 Weidman, NW NW NE Section 15-15-15w, had Siliceous lime at 3,271-3,312 feet and a hole full of water. It was plugged back to 3,217 feet. Oswald lime was topped at 2,998 feet. It had not been tested.

Sinclair Prairie Oil Co.'s No. 3 Heffernan, NW SW NE Section 26-15-13w, swabbed 105 bbls. of oil in six hours from Siliceous lime at 3,253-55½ feet.

Barton County

Lario Oil & Gas Co.'s No. 1 Nuss, NW SW SW Section 11-16-14w, a wildcat in Barton County, was acidized at 3,341-91½ feet and it filled up 2,500 feet with fluid, but had not been given a production test.

Darby Petroleum Co.'s No. 1 Kultgen, SE NE NW Section 16-16-12w, which had Siliceous lime at 3,341-42 feet, total depth, and 1,900 feet of oil in the hole in four hours had not yet been treated.

Rush County

Eldorado Refining Co.'s No. 1 Stang, SE SE SW Section 36-17-17w, a wildcat in Rush County, had a showing of oil in Kansas City lime at 3,415-25 feet but was underreaming 8-inch to 3,460 feet.

Schermerhorn Oil Co.'s No. 1 Schroeder, NE cor. Section 36-18-16w, at a total depth of 3,626 feet, is good for 11,700,000 feet of gas from LaMotte sand topped at 3,577 feet, first gas at 3,584 feet. It was not completed.

Trego County

Vickers Petroleum Co. and others made a location for No. 1 Secor, NW NW NW Section 25-15-24w, in Trego County.

Ellsworth County

Empire Oil & Refining Co.'s No. 4 Rolfs, SE SW NE Section 14-17-9w, Ellsworth County, had Siliceous lime at 3,170-77 feet, total depth. It produced 1,083 bbls. in 24 hours and was completed.

Gypsy Oil Co. was building rig for No. 1 Nienke, 330 feet east and 271 feet north of SW cor. Section 12-17-9w.

Bradley, Scanlon and others' No. 2 Mohney, NW SE SE Section 14-17-9w, had 3,000 feet of oil in the hole from Siliceous lime at 3,190-94 feet, total depth.

Empire Oil & Refining Co.'s No. 5 Rolfs, NW SE NE Section 14-17-9w, filled up 3,000 feet with oil in three hours from Siliceous lime at 3,175-78 feet.

Rice County

Slick, Pryor & Lockhart, Inc., and others' No. 3 Orth, SW SW NE Section 27-18-10w, Rice County, was completed as a gas well. It made 24,522,000 feet of gas in 24 hours from Kansas City lime at 2,845-2,945 feet.

Keith and others' No. 3 Volkland, SW NE SE Section 20-19-9w, was completed in Siliceous lime at 3,227-59 feet, total depth. It was good for 645 bbls. of oil initially. It was later acidized but the treatment did not increase production.

Magnolia Petroleum Co.'s No. 4 Beyers, NE SW NW Section 21-19-9w, made a potential production of 1,222 bbls. of oil from Siliceous at 3,228-33 feet, total depth, and was put on the completion list.

Vickers Petroleum Co. and others' No. 1 Gouldner A, NE SE NW Section 16-18-9w, is a location; Three Rivers Oil Co.'s No. 1 Buehler, NW NW NW Section 17-18-8w, a wildcat, rig; C. B. Davis and others' No. 3 Dueser, 1,172 feet from south and 330 feet from east lines of SW quarter Section 31-19-10w, moving in material; Magnolia Petroleum Co.'s No. 5 Beyers, NW SW NW Section 21-19-9w, rigging up rotary; Gypsy Oil Co.'s No. 1 Dewitt, SE SE SE Section 9-20-9w, rigging up rotary; Gypsy Oil Co.'s No. 1 Dewitt, SE SE SE Section 9-20-9w, cellar dug.

Vickers Petroleum Co. and others' No. 1 Gouldner, SE NE NW Section 16-18-9w, had Siliceous lime at 3,224-29 feet, total depth. It swabbed 20 bbls. of oil per hour. It was put on the pump but was not adequately tested because of mechanical trouble.

Smith, Ash & Phillips' No. 3 Beyers, SW SE NW Section 21-19-9w, pumped 35 bbls. of oil and 20 bbls. of water from Siliceous lime at 3,273-95 feet. It had been acidized.

Gypsy Oil Co.'s No. 2 Callis, 982 feet south and 330 feet east of NW cor. Section 28-19-9w, with Siliceous lime at 3,235½-80 feet, total depth, was plugged back to 3,260 feet and acidized. It pumped 195 bbls. of oil in 12 hours. It showed some water.

Empire Oil & Refining Co.'s No. 3 Tournear, NE SE NE Section 29-19-9w,

(Continued on Page 102)

Wildcat Operations in Kansas

Week Ending June 22

(Descriptions are East unless marked otherwise)

BARBER COUNTY

Southern Drlg. Co. et al's No. 1 Davis, 330 ft. from W and 330 ft. from S lines of NE Sec. 13-34-15w.
T.D. 4,664 ft.

L. H. Wentz' No. 1 Skinner, SE NW NW NE Sec. 29-31-14w.
Drlg. 3,250 ft.

BARTON COUNTY

Lario O. & G. Co. and McCoy's No. 1 Dolechek, NE NW NE Sec. 13-16-12w.
Drlg. 2,670 ft.

Lario O. & G. Co. et al's No. 1 Nuss, NW SW SW Sec. 11-16-14w.
Oswald 3,155 ft.; shows of oil 3,341-88 ft.; H.F.W. 3,393 ft.; P.B. to 3,391½ ft.; acidized; 2,500 ft. fluid in hole.

McMorrow & Spencer's No. 1 Hagen, NE cor. Sec. 33-20-11w.
U.R. 5-in. to 3,512 ft.

Palmer Oil Corp.'s No. 1 Morris, SE NW NE Sec. 6-19-15w.
Rigging up.

C. L. Price et al's No. 1 Ehrlich, NW SE Sec. 10-16-13w.
Drlg. 1,738 ft.

Pryor & Lockhart's No. 1 Herrington, NE NW Sec. 6-16-13w.
Drlg. 2,785 ft.

Suppes & Witt's No. 1 Hayes, NW cor. Sec. 7-16-15w.
Drlg. 1,650 ft.

BUTLER COUNTY

Hay & Cameron's No. 1 Johnson, NW NW SE Sec. 16-26-6.
Fishing 3,000 ft.

Polhamus et al's No. 2 Semisch, C S½ NE NE Sec. 5-28-7.
Drlg. 1,010 ft.

Sanford et al's No. 1 Cron, SE SE SE Sec. 1-28-4.
K.C. lime 7,865 ft.; drlg.

Sinclair Prairie Oil Co.'s No. 1 Moore, SE SW SE Sec. 36-24-3.
Location.

Ward McGinnis' No. 1 Jackson, SW NE Sec. 26-25-5.
Drlg. 750 ft.

Western Kansas O. & R. Co.'s No. 1 King & Marshall, NW NW SW Sec. 11-28-6.
Spudded and S.D.

CHAUTAUQUA COUNTY

Central Oil Co.'s No. 1 Crews, NE NE SW Sec. 8-32-12.
Drlg. 1,600 ft.

CLAY COUNTY

Seidel Bros.' No. 1 Younken, C S½ SE NW Sec. 21-9-4.
Mississippi 1,772-81 ft.; est. 25 bbls. oil and some wtr.; P.B. to 1,773 ft.

COWLEY COUNTY

Baden, Johnson Roth & Faurot's No. 1 David, NE SW Sec. 35-30-4.
Drlg. 960 ft.

Lloyd, Frost & Study's No. 1 Weathered, SW SE SE Sec. 28-31-3.
Siliceous lime 3,339 ft.; T.D. 3,344 ft.; pumped 92 bbls. of oil and 47 bbls. of wtr. in 17 hrs.; T.D. 3,355 ft.; no test.

Wakefield's No. 1 Tharp, SE SE NE Sec. 10-32-3.
Rigging up.

DICKINSON COUNTY

Dutch Oil Co.'s No. 1 Phillips, C NE NW Sec. 15-15-1e.
Hunton 2,808 ft.; H.F.W. 2,812 ft.; S.D. 2,880 ft.

ELK COUNTY

Hicks et al's No. 1 Lewis, SW SE SE Sec. 35-31-10.
S.D. 1,000 ft.

ELLIS COUNTY

Joe Aylward's No. 1 Drelling, SE SE SE Sec. 3-14-16w.
Drlg. 1,090 ft.

Helmerich & Payne et al's No. 1 Kuhn, C NE quarter Sec. 16-14-20w.
Drlg. 395 ft.

Tom Palmer and Storm King Oil Co.'s No. 1 Ruder, SE NE NW Sec. 17-15-18w.
Drlg. 2,350 ft.

Stanolind O. & G. Co.'s No. 1 Penney-Wann, NW SW SE Sec. 12-15-20w.
Fishing 3,059 ft.

ELLSWORTH COUNTY

Lario O. & G. Co.'s No. 1 State, SW SW SW Sec. 29-15s-8w.
S.D. 3,937 ft.

Western Exploration Co.'s No. 1 Wilkins, NW SW NW Sec. 9-17-9w
K.C. lime 2,940 ft.; S.D. 3,200 ft.

GRAHAM COUNTY

Helmerich & Payne et al's No. 1 Stites, C SW SW Sec. 8-10-22w.
Rigged up.

GREENWOOD COUNTY

Foster & Schultz's No. 1 Ferguson, C S½ NE SW Sec. 12-26-13.
Drlg. 1,340 ft.

HARPER COUNTY

Kessler, Thier et al's No. 1 Wolfje, SW SW SE Sec. 17-33-6w.
Moving in material.

HARVEY COUNTY

Cameron, Derby Oil Co. and Trees' No. 1 Brainard, SW SE NW Sec. 19-24-2.
Ran 6-in. csg. to 3,064 ft.

Goering Bros.' No. 1 Brainard, NE SW Sec. 3-23-2w.
Fishing 1,320 ft.

H. H. & S. Oil Co.'s No. 1 Frizzle, NE NE SE Sec. 31-23-2w.
Rigging up.

Hartman & Blair et al's No. 1 Redinger, NW cor. Sec. 15-24-3w.
Rig.

D. R. Lauck et al's No. 1 Baller, SW cor. Sec. 29-24-1.
Drlg. 3,599 ft.

L. W. Prunty et al's No. 1 Davis, NE cor. Sec. 6-22-1w.
Chat 2,922 ft.; drlg. 2,928 ft.

Twin Drlg. Co. et al's (O. J. Connell), No. 1 Ruth, SW cor. Sec. 16-22-2w.
Drlg. 3,610 ft.

Winkler Koch et al's No. 1 Mueller, SE SW NW Sec. 15-23-2w.
U.R. 8-in. csg. to 2,455 ft.

KINGMAN COUNTY

Derby et al's No. 1 Bartholomew, SW SW NW Sec. 8-27-4w.
S.D. 630 ft.

Gypsy Oil Co.'s No. 1 Tonn, SW NW SE Sec. 16-25-4w.
Drlg. 1,280 ft.

Sam Jarvis et al's No. 1 Morrisse, C SE NE Sec. 23-30-10w.
Rig.

Kingman Oil Co.'s No. 1 Wetherall, NE NE SW Sec. 20-28-10w.
Coring 3,525 ft.

McPHERSON COUNTY

Anderson & Kerr et al's No. 1 Lackey, NE SE NW Sec. 13-21-4w.
Drlg. 2,629 ft.

Brosius et al's No. 1 Hanson, NE NE SW Sec. 15-17-2w.
T.D. 1,108 ft.; S.D.

Carey & Miller's No. 1 Husband, SE SE NW Sec. 6-19-3w.
Rig.

(Continued on Next Page)

Kansas Wildcats

(Continued from Preceding Page)

Hollow, Toews & Hinkle's No. 1 Aschman, NW NW SE Sec. 8-21-4w.
Rig.

Shell Pet. Corp.'s No. 1 Wenger, NE cor. Sec. 2-20-1w.
Viola 3,856-64 ft., T.D.; swbd. 255 bbls. in 10 hrs.; 50% wtr.; acidized; potential production 100 bbls. oil, 620 bbls. of wtr.; P.B. to 3,859 ft.; pumped 80 bbl. of oil and 210 bbls. of wtr. in 7 hrs.; S.D. for pipe line.

J. M. Washabaugh et al's No. 1-A Berg, SW SW NE Sec. 15-20-3w.
Moving in material.

NESS COUNTY

Philips Pet. Co.'s No. 1 Young, C NW SW Sec. 13-18-21w.
Mississippi lime 4,175 ft.; H.F.W. 4,179-83 ft.; T.D. 4,235 ft.; abd.

OSAGE COUNTY

Jim Edwards' No. 1 Detrick, C NW SE Sec. 21-14-15.
Show oil and gas 782-800 ft.; T.D. 800 ft.

RENO COUNTY

Allison & Fitzwilliams' No. 1 Dukelow, NE NE NE Sec. 11-22-6w.
Rigging up.

Bradley's No. 1 Olmsted, SW SW SW Sec. 33-23-7w.
Moving in material.

Foraker et al's No. 1 Hiett, SE SW NE Sec. 34-24-4w.
T.D. 1,235 ft.; S.D.

Gypsy Oil Co.'s No. 1 Tonn, SW NW SE Sec. 16-25-4w.
Base of Miss. lime 3,880 ft.; drlg. 3,965 ft.

Haynes Bros.' No. 1 Mueller, SE SE NW Sec. 20-24-4w.
Run 7-in. csg. to 3,365 ft.; standardizing.

L. A. Mylius et al's No. 1 Sprowl, NE NW NE Sec. 1-24-5w.
Hunton 3,744 ft.; wtr. 3,747 ft.; H.F.W. 3,876 ft.; drlg. 3,916 ft.

RICE COUNTY

Anderson & Kerr's No. 1 Wernet, NW NW NW Sec. 24-20-6w.
R.U. rotary.

Day et al's No. 1 Mason, NW NE NE Sec. 28-21-7w.
S.D. 2,460 ft.

Detrick et al's No. 1 Conner, C NE NE Sec. 28-19-7w.
Cellar.

Detrick et al's No. 1 Monroe, C NE NE Sec. 9-20-7w.
Cellar.

Fred Rust et al's No. 1 Brown, NE cor. Sec. 16-21-6w.
Rigged up.

Three Rivers Oil Co.'s No. 1 Buehler, NW NW NW Sec. 17-18-8w.
Rig.

Vickers Pet. Co. et al's No. 1 Gouldner, SE NE NW Sec. 16-18-9w.
Siliceous lime 3,224-27 ft.; hole full oil; T.D. 3,229 ft.

ROOKS COUNTY

El Dorado Refining Co.'s No. 1 Marshall, C SE SE Section 5-7-17w.
Cellar.

Murfin et al's No. 1 Wasthusin, NE NE SE Sec. 19-9-16w.
Rig.

Smith & Ash's (Carman & Hershey) No. 1 Nelson, NW NW NE Sec. 27-10-16w.
S.D. 122 ft.

Trees Oil Co. and Findeiss' No. 1 Johnson, SW SW SE Sec. 26-10-19w.
Drlg. 1,693 ft.

RUSH COUNTY

Boyle & Grossman's No. 1 Wilson, NE NE NE Sec. 33-17-19w.
Cellar.

P. Boyle et al's No. 1 Yost, C SW SW Sec. 28-17-18w.
Drlg. 3,365 ft.

Eldorado Ref. Co.'s No. 1 Stang, SE NW Sec. 36-17-17w.
K.C. lime 3,320 ft.; show of oil 3,415-25 ft.; U.R. 8-in. csg. to 3,460 ft.

Lario O. & G. Co. et al's No. 1 Gillig, NE SE NW Sec. 24-17-17w.
Drlg. 465 ft.

Lario O. & G. Co. and Phillips Pet. Co.'s No. 1 Benbow, NW NE NE Sec. 12-17-19w.
T.D. 3,790 ft.; fishing.

Ramsey Pet. Co. et al's No. 1 Darkes, SW SW NW Sec. 5-17-20w.
Drlg. 1,600 ft.

Twin Drlg. Co. et al's No. 1 Appl, SW SW NE Sec. 29-17-17w.
Drlg. 1,100 ft.

RUSSELL COUNTY

J. Brouk and R. D. Bailey's No. 1 Kleusner, NW SE Sec. 34-15-12w.
Drlg. 1,370 ft.

Buffalo Oil Co.'s No. 1 Kuns, NE NE SW Sec. 19-14-15w.
Moving in material.

Coraleana Oil Co.'s No. 1 Flegler, SE SE SE Sec. 11-15-14w.
Moving in material.

Hartman & Blair's No. 1 Claussen, SE NE SW Sec. 34-13-14w.
T.D. 500 ft.

Hartman & Blair's No. 1 Rexroat, NE NW NW Sec. 31-14-14w.
Drlg. 2,165 ft.

Hartman & Blair's No. 1 Mills, SE SE SW Sec. 27-15-15w.
Drlg. 1,470 ft.

Murphin et al's No. 1 Funk, SW cor. Sec. 19-12-13w.
Fishing at 3,040 ft.

Murfin et al's No. 1 Gorham estate, NE NE SE Sec. 29-14-15w.
Cellar.

Nassau Oil Corp.'s No. 1 Karst, NW SW NE Sec. 27-15-14w.
Rigging up.

Tom Palmer's No. 1 Machin, SW SW SE Sec. 9-13-14w.
Cellar.

Pryor and Lockhart's No. 1 Spicer, NE SE Sec. 21-11-15w.
Rigging up.

Reserve Pet. Co.'s No. 1 Moore, NW NW SW Sec. 15-13-12w.
Drlg. 1,700 ft.

Roth & Faurot's No. 1 Shaffer, NW NW NE Sec. 31-13-12w.
Cellar.

Stearns & Streeter's No. 1 Dreiling, SW SW SW Sec. 8-13-15w.
Location.

Vernon & Murphin's No. 1 Becker, NE cor. Sec. 32-15-14w.
S.D. 2,335 ft.

Wakefield & Armer's No. 1 Hall, NE SE SW Sec. 36-14-15w.
Siliceous lime 3,171-76 ft.; 2,900 ft. of oil in hole.

A. E. Seely et al's No. 1 Herman, SE NW Sec. 27-12-15w.
S.D. 450 ft.

Winkler & Koch's No. 1 Harman, SE SE NW Sec. 27-12-15w.
Drlg. 2,507 ft.

Wolf Creek Oil Co. et al's No. 1 Penn Mutual, SW cor. Sec. 22-15-15w.
Siliceous lime 3,475 ft.; H.F.W. 3,504-91 ft.; abd.

SEDGWICK COUNTY

Allison & Fitzwilliams et al's No. 1 Struthers, NE SW Sec. 34-28-2w.
Ran 8-in. csg. to 3,035 ft.; drlg. in new hole.

Magnolia Pet. Co.'s No. 1 Bartholomew, SE SE SW Sec. 30-27-4w.
Chat 3,682 ft.; 9-in. 3,692 ft.; standardizing.

SCOTT COUNTY

Atlantic Oil Prod. Co.'s No. 1 Mark "A," C SE SE Sec. 28-20-33w.
Drlg. 5,135 ft.

STAFFORD COUNTY

C. B. Davis et al's No. 1 Riley, SE cor. Sec. 19-22-11w.
Siliceous lime 3,589-3,606 ft., T.D.; 2,535 ft. of oil in hole.

Empire O. & R. Co.'s No. 1 Grove, NE NE NW Sec. 5-22-11w.
Drlg. 1,984 ft.

Helmerich & Payne's No. 1 Geisler, NW NW SE Sec. 28-22-12w.
Siliceous lime 3,611-25 ft., T.D.; show oil.

SUMNER COUNTY

Allison & Fitzwilliams et al's No. 1-B Hitchcock, SE NW Sec. 16-30-1w.
Drlg. 2,000 ft.

Kessler & Their et al's No. 1 Wolfje, SW SW NE Sec. 17-32-6w.
Rigging up.

D. J. Wilson et al's No. 1 Clark, 1,320 ft. from W and 25 ft. from S line of NW Sec. 15-35-1w.
S.D. 1,000 ft.

Winkler & Koch et al's No. 1 Belsley, SW SW NW Sec. 2-32-2w.
Moving in material.

TREGO COUNTY

Central Commercial's No. 1 Wagg, NW NW SE Sec. 17-13-21w.
C.O. at 1,600 ft.

Hanna & Lauck and Olson Drlg. Co.'s No. 1 Lang, SE SE NW Sec. 1-14-21w.
Topeka lime 3,285 ft.; T.D. 3,314 ft.; fishing.

Vickers et al's No. 1 Secor, NW NW NW Sec. 25-15-24w.
Location.

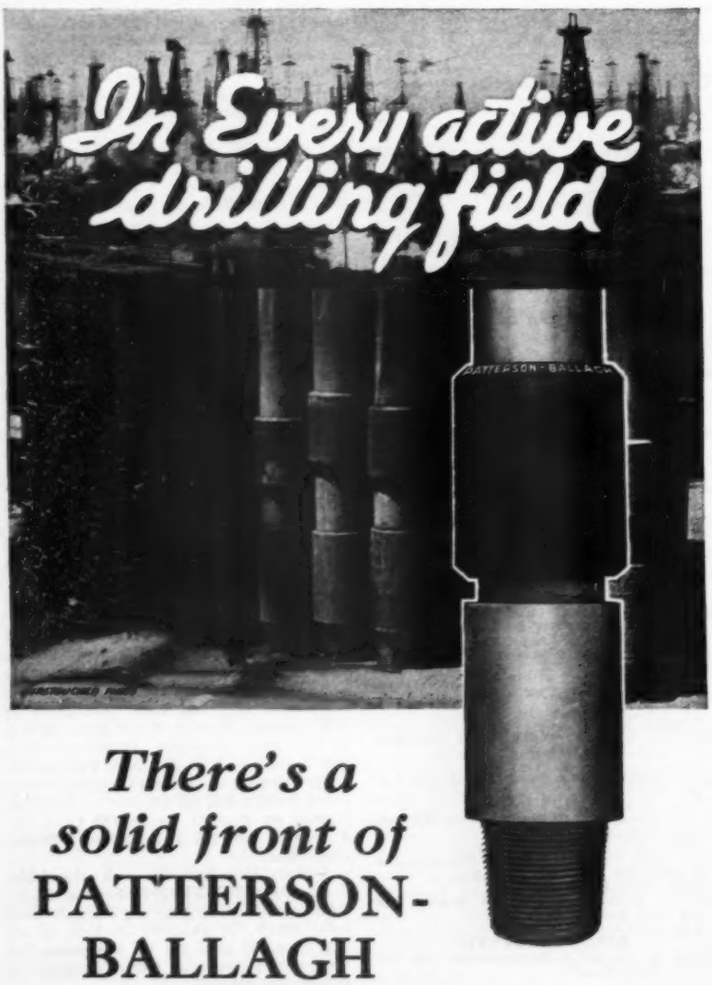
WOODSON COUNTY

Connell & Marshall's No. 1 Klick, SW NW SW Sec. 20-25-14.
Drlg. 90 ft.

NEBRASKA

SAUNDERS COUNTY

Midland Oil Co. and Murfin's No. 1 Forster, S half NE Sec. 5-16-8e.
Drlg. 1,100 ft.



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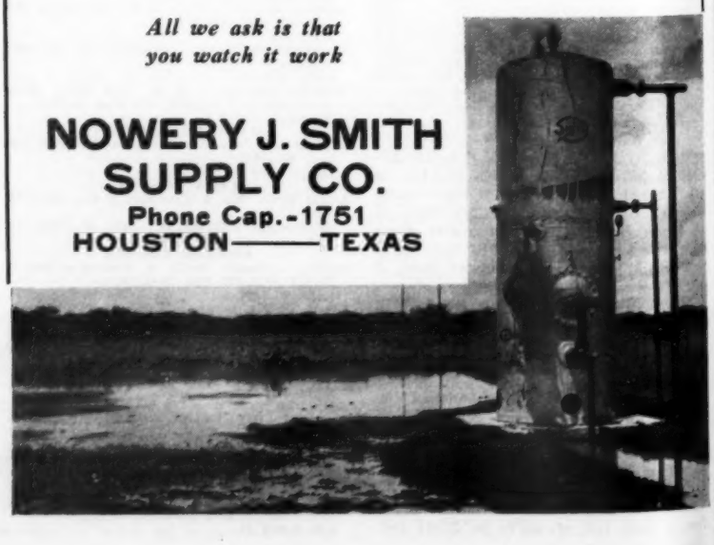

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Among Gulf Coast Drilling Contractors

Talbot Drilling Co. is preparing to spud a Cockfield test well in northwestern Montgomery County, on the C. S. Atkinson fee land, for V. E. Boylard, trustee. Location is on a 40-acre drilling site, 220 feet east of the T. & B. V. Railroad track, and 1,600 feet south of the north line. Talbot is also preparing to spud a well in the Splendora area for Paul T. Sanderson, trustee, located 3,800 feet from the gas well completed several months ago by the Steen Drilling Co.

C. & C. Drilling Co. is drilling below 6,800 feet in shale on a well for the Coast Petroleum Co. in the Dickinson Field, Galveston County. Same contractors are drilling below 2,500 feet on T. A. Carlton's No. 2 Watt in the Livingston Field. If the later is completed it will be Carlton's second well in this field. He is president of C. & C. Drilling Co.

Glenn H. McCarthy, Inc., is drilling below 2,800 feet on a test in the new Anahuac Field, Chambers County, located 1¾ miles north of the Humble Oil & Refining Co.'s northernmost well in the field. Formations encountered in drilling surface hole check very favorably with those encountered by the Humble company on its producing wells.

George Echols left late last week on a business trip which will take him to Chicago, Baltimore and New York. Echols completed a workover job in the Manvel Field for J. Simmons of Dallas, and well is now making approximately 180 bbls. per day. Job involved cementing back after well had originally been drilled to water by another crew, sidetracking through 7-inch and setting 5-inch casing in new hole in the sand. At Nash Dome Echols is drilling below 500 feet for Quintana Petroleum Corp.; is setting surface pipe for Uscan Oil Co. at Manvel; is drilling below 4,100 feet on the Brooks ranch in Jim Hogg County for Sun Oil Co.; is drilling below 3,400 feet in East Texas for the Houston Oil Co.; and has one rig on day work for the Humble Oil & Refining Co. on the Thompson ranch in Bee County.

Rutherford Drilling Co. is fishing on a well for Eastern Texas Petroleum Co. in the Placedo Field, and is drilling a third well for the Skelly Oil Co. in the Van Vleck Field, near Bay City, Matagorda County.

San Patricio Drilling Co. is moving in to drill a well for the Skelly Oil Co. in the Cayuga Field.

W. Claud Smith has just completed a well in the Tomball Field for the Texas Co., and is plugging back on a well for the same company in the Port Lavaca Field.

L. W. Capps has completed a contract hole at 6,577 feet for Dick Schwab, 12 miles southwest of Orange, Tex. At Jennings, La., Capps has a rig waiting on orders to drill a well for H. M. Naylor.

Edwards Drilling Co. is drilling below 3,000 feet on a well for the Moretex Oil Co. in the Placedo Field.

Jeff Hooper is drilling below 1,000 feet on a well for the Trans-State Oil Co. in the Coleta Creek Field, Victoria County, and is drilling below 5,400 feet in shale on a well for H. B. Hebert, J. J. Still and himself near Cypress, Harris County.

Anderson, Kerr & De Arman are drilling below 4,500 feet on a test for Diadem Oil Co. in Waller County.

Smith & McDannald have moved in a rig to drill a test for the Shell Petroleum Corp., carried as No. 1 A. and E. Steves, in the Louise Field. In addition, these contractors have one rig running for the Stanolind Oil & Gas Co. in the Hastings Field, Brazoria County; one rig in East Texas for the Tide Water Oil Co.; one rig at Louise for the Pure Oil Co.; one rig in the Roanoke, La., Field for the Shell Petroleum Corp., and four rigs in the Bosco Field for the Superior Oil Producing Co.

J. E. (Blackie) Manning, field superintendent for Noble Drilling Co., made his bow to the Gulf Coast with a rig in the Conroe Field, and has been drilling wells in this area since. Those in the picture, taken in the Hastings Field, Brazoria County, where Noble Drilling Co. is drilling for the Stanolind Oil & Gas Co. are: Left to right, J. E. Manning, C. B. (Boots) Kennedye, J. E. Johnson, driller; R. L. Howlet, A. B. Mundku and H. D. Hobbs

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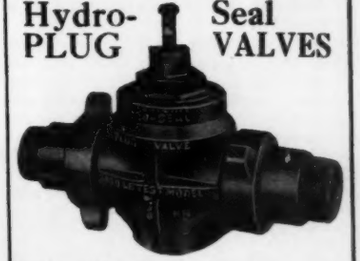

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Wharton and Montgomery Wildcats Holding the Attention of Gulf Coast Operators

By F. L. SINGLETON
Staff Correspondent, Gulf Coast Fields

HOUSTON, Tex., June 24.—Two rank wildcat tests, one in the central part of Wharton County and the other in the extreme northern part of Montgomery County were holding the attention of Gulf Coast operators at the close of the week, due to promising showings which may mean the discovery of new fields.

Of most importance is Texas Co.'s No. 2 Pierce Estate in the central part of Wharton County in the I.&G.N. Survey No. 39, reported last week as a possible pool opener when it tested 550 pounds of pressure on a drill stem from 4,680-99 feet. After the test was made, loose sand showing oil and gas was cored to 4,704 feet, the total depth, and after running an electrical coring test the operators cemented 9⅝-inch casing at 4,697 feet and it is due to be tested the first part of the week.

The test is located on a block of 12,000 acres and is the second well to be drilled on the block within the past few months. It topped the Discorbis at 3,988 feet, the Heterostegina at 4,233 feet and the Marginulina, the producing horizon, at 4,667 feet. Based on these markers, it is checking considerably higher than the first test located to the southeast which was abandoned in the Frio horizon at 6,546 feet.

Although the wildcat test of Charles B. Gohlson's No. 1 Aaron Parker has failed to make a commercial well after several production tests, it has shown enough gas pressure and oil to warrant considerable interest. After the hole had been deepened 4 feet to a depth of 3,773 feet and 7-inch casing cemented at 3,721 feet, it was tested for six hours and did not flow, but the tubing seal evidently gave way, the casing pressure built up to 120 pounds and the well began to flow a steady spray of pipe line oil through a one-quarter inch choke on the tubing, estimated at 5 bbls. per hour, with a slight taste of brackish water. After several hours it stopped flowing steadily and began flowing by heads with the tubing and casing pressure dropping to 15 pounds. It is the opinion of the operators that there is a hole in the casing as the plug stopped at around 3,235 feet when the casing was cemented, and the brackish water did not show up until the tubing seal gave way and the casing began to show gas pressure. The well is scheduled to be killed, to pull the tubing and set a new packer.

The test is bottomed in the Upper Cockfield sand topped at 3,695 feet and is west and northwest of two dry holes drilled some time ago which reported several showings of oil and gas at around its present depth, and checked somewhat lower on geological markers. Location is 250 feet from the north line and 200 feet from the east line of the Parker 139-acre tract in the J. Lindley Survey.

Matagorda

The prospects of H. M. Smith's No. 1 Wadsworth, a wildcat test located in the S. R. Fensler Survey, southern Matagorda County, opening up another producing area is still doubtful. It is bottomed in the Marginulina at 8,418 feet and after it was tested last week through perforated casing from 8,155 to 8,175 feet for 1 hour and 40 minutes, the operators pulled the tubing and ran in the hole with a lead seal on bottom and sealed on top of the liner. It was washed again through the inside of the screen, but failed to clean itself, and after swabbing down to 7,100 feet it was shut in to allow the fluid to rise. If the test fails to make a commercial well on the next test the screen is expected to be pulled and the test carried on down for a test in the Frio sand.

Port Lavaca

The northern and western limits of the Port Lavaca Field were further defined when Texas Co. abandoned three tests. One-half mile north and slightly west of the discovery well, its No. 1 Duelberg was abandoned at a plugged back depth of 6,240 feet after testing dry. It was originally drilled to 6,430 feet. In this same area it also abandoned the location made for its No. 1 Ada Foster. About 2,500 feet west of its Wehymer producer, its No. 1 Charles Geryk in the Benavides Survey cored salt water sand from 6,731-40 feet and was abandoned in salt water sand at a total depth of 6,780 feet. Due west, its No. 1 Kupatt was abandoned after testing dry at a total depth of 6,305 feet. Offsetting Steinberger Petroleum Co.'s No. 1 Shofner to the south, the company's No. 1 Shofner is pulling screen to plug off part of the sand that carried some salt water which appeared shortly after the test was completed for an initial production of 15 bbls. per hour from a total depth of 6,260 feet.

After the location had been abandoned for its No. 1 Dusek, due to the showing of the above tests by the Texas Co., Empire Gas & Fuel Co. made location for its No. 1 Hartman, 1,924 feet from the southeast line and 497 feet from the northeast line of an 80-acre lease in the M. Sanches Survey. It is northeast of Texas Co.'s Wehymer producer and is a west offset to Steinberger Petroleum Co.'s No. 2 Shofner, location of which was made this week.

Hastings

One completion and four locations were reported for the Hastings Field, northeastern Brazoria County, all being made by Stanolind Oil & Gas Co. The company's No. 1 Emil Grote, in the south part of the field, was completed for an initial production of 25 bbls. per hour through a nine-sixty-fourths inch choke, with tubing pressure 750 pounds and casing pressure 525 pounds. Seven-inch casing was cemented at 5,862 feet, with the bottom of the hole at 6,100 feet. New locations included No. 3 J. W. Surface, in the A.C.H.&B. Survey No. 2; No. 3 B. L. Turner in the A.C.H.&B. Survey No. 1; No. 4 Gilbert Sneed in the A.C.H. & B. Survey No. 2, and No. 2 Emil Grote in the same survey.

Anahuac

In the Anahuac Field, northern Chambers County, Humble Oil & Refining Co.'s No. 3 Middleton extended production to the northeast when it was completed at a plugged back depth of 7,100 feet for an initial production of 30 bbls. per hour on a one-quarter inch choke, with tubing pressure 1,050 pounds and casing pressure 1,250 pounds. It was purposely drilled to 7,172 feet to establish the water level which was found at 7,130 feet. Location is in Section 58 of the H.&T.C. Survey.

Dickinson

Humble Oil & Refining Co.'s No. 1 Fugger in the Dickinson Field, Galveston County, failed to flow when tested through perforated casing from 8,060-77 feet and is pulling the screen to perforate the casing from 8,077-81 feet, the total depth. It is an east offset to Humble Oil & Refining Co.'s No. 1 Jones, a producer in the J. S. Sherman Survey. Location has been made for the company's No. 5-A Stewart, 466 feet west of the east line of the Stewart "A" 863.11-acre tract in the John Sellers Survey. It is 5,500 feet due south of No. 2-A Stewart.

With three wildcat locations announced the past week and reports of several companies curing titles to large blocks of acreage preparatory to drilling, wildcatting in the district seems to be increasing. In the Eastgate area, southwestern Liberty County, D. H. Furse has staked his No. 1 J. F. Kover 300 feet out of the southwest corner of a 100-acre tract in the J. R. Mayhon Survey. Centering around the town of Devers, Humble Oil & Refining Co. is curing titles on its block that was taken some time ago. L. C. Luckel and others have started curing titles on their block, recently assembled along the Liberty-Chambers County line.

Montgomery

North of the town of Pinehurst, in the southwestern part of Montgomery County, B. E. Boyland, trustee, has derrick up for his No. 1 Atkinson, located 220 feet east of the T.&B.B. railroad and 630 feet south of the north line of Robbins George Survey on a 207-acre tract. In the extreme northern part of the county and due west of the Gholson test, the Mid-Texas Oil Co. has taken a drilling block of approximately 3,500 acres, centering around the southwest corner of the Thomas Jones Survey and are scheduled to start a test within 60 days. In Jefferson County, north of Beaumont, centering around the Hezekeh Williams, Absolom Williams, Jones Drake and Noah Lewis Surveys, J. B. Spencer and others are assembling a drilling block and will start a 6,000-foot test by December, 1935.

Harris

Stanolind Oil & Gas Co.'s No. 1 Fee, the discovery well for the south Houston district in Harris County which made 161 bbls. of net oil in 24 hours the past week, opening up another field for the district, was killed shortly after it made the above gauge, to change its connection in an attempt to stop a gas leak that developed between the 13⅜-inch casing and the 9⅝-inch casing, and late in the week the operators were swabbing, in attempt to bring it back on production.

Although the company has made location for 4 wells to be drilled in the new field, development will probably be held up for some time, due to a controversy between the Stanolind Oil & Gas Co. and the lease and royalty owners, pertaining to a 16-acre spacing rule proposed by the company. At a hearing before the Railroad Commission at Austin the past week, the company urged the commission to adopt the spacing rule as incorporated in a city ordinance some time ago which limits one well to 16 acres in the townsite and one well to 10 acres outside of the townsite, with the allowable based on a potential and acreage basis. It is reported that a large majority of the town lot owners are in favor of one well for every town lot or four wells to each drilling unit. The South Houston townsite includes approximately 4,000 town lots which were divided by the company into 85 drilling blocks of about 50 lots to each block.

Livingston

A half mile northwest extension was made for the Livingston Field, in Polk County, by the completion of Humble Oil & Refining Co.'s No. 9 Granbury in the A. Viesca Survey, which was completed for an initial production of 360 bbls. per day through one-quarter inch choke with tubing pressure 890 pounds and casing pressure 1,500 pounds at a total depth of 4,299 feet. Seven-inch casing was cemented at 4,222 feet. The completion of the test will no doubt start an

(Continued on Page 96)

Wildcat Operations on Gulf Coast

Week Ending June 22

RACCOON BEND—AUSTIN COUNTY

Humble O. & R. Co.'s No. 6 McCasland, 933 ft. SE from No. 4-X McCasland, 250 ft. at R/A NE from SW line, Wm. C. White Sur.
Rig up.

Humble O. & R. Co.'s No. 17-X Thompson, 933 ft. SE from No. 13-X Thompson, 466 ft. SW from NE line.
Drlg. sandy shale 3,225 ft.

Humble O. & R. Co.'s No. 7-X Helmuth, 2,-348 ft. along NE line, 150 ft. at R/A from lease line.
T.D. 4,090 ft.; I.P. 58.75 bbls. per hr.; ½-in. choke; T.P. 470 lbs.; C.P. 530 lbs.

ALLEN DOME—BRAZORIA COUNTY

Mills Bennett Prod. Co.'s No. 4 Rose Allen, 330 ft. SE of No. 1, 300 ft. E of No. 4 Owens, J. G. Mendal Sur.
Drlg. shale 5,420 ft.

DAMON MOUND—BRAZORIA COUNTY

Intercoastal Oil Co.'s No. 13 Wisdom, 150 ft. from NW line and 10 ft. from SW line of Lot "D", Blk. No. 51.
S.D. 2,600 ft.

HASTINGS—BRAZORIA COUNTY

Humble O. & R. Co.'s No. 1 E. Lively, 330 ft. from the N line, and in the center of E and W lines of Lot 13, A.C.H.&B. Sur. Derrick.

Humble O. & R. Co.'s No. 1 J. F. Bridges, center of N 10 acres of 20-ac. lease, A. C.H.&B. Sur. No. 2.
Location.

Humble O. & R. Co.'s No. 2 J. F. Bridges, center of S 10 acres of 20-ac. lease, A. C.H.&B. Sur. No. 2.
Location.

Humble O. & R. Co.'s No. 1 J. C. Johnson, center of 10-ac. lease, A.C.H.&B. Sur. No. 2.
Location.

Stanolind O. & G. Co.'s No. 3 J. W. Surface, 330 ft. S and 455 ft. W of most northerly NE cor. of 75.9-ac. tract, A.C.H.&B. Sur. No. 2.
Rig up.

Stanolind O. & G. Co.'s No. 3 B. L. Turner, 330 ft. at R/A from NW line and 330 ft. from S line of Turner 195-ac. tract, A.C. H.&B. Sur. No. 1.
Location.

Stanolind O. & G. Co.'s No. 4 Sneed, 330 ft. S, 330 ft. W of NE cor. of Lot 12, D. M. Jay Subd., on Sneed 225-ac. tract, A.C. H.&B. Sur. No. 2.
Location.

Stanolind O. & G. Co.'s No. 2 E. Grote, 466 ft. at R/A from N line and 1,061.6 ft. at R/A from E line of Grote 71.62-ac. tract, A.C.H.&B. Sur. No. 2.
Location.

Stanolind O. & G. Co.'s No. 2 Turner, 285 ft. N, 2,876 ft. W of SE cor. of 195-ac. tract, A.C.H.&B. Sur. No. 1.
Moving in rig.

Stanolind O. & G. Co.'s No. 1 Kidd, 285 ft. S of N line, 455 ft. E of W line of 58.4-ac. lease, A.C.H.&B. Sur. No. 2.
Drlg. shale 2,937 ft.

Stanolind O. & G. Co.'s No. 1 J. C. Hutchinson, 330 ft. S, 330 ft. E of the NW cor. of a 40-ac. tract in the A.C.H.&B. Sur. No. 36.
Drlg. sand 4,490 ft.

Stanolind O. & G. Co.'s No. 3 Sneed, 466 ft. at R/A from W line and 466 ft. at R/A from the N line of a 225-ac. tract, A.C. H.&B. Sur. No. 2.
Drlg. shale 5,320 ft.

Stanolind O. & G. Co.'s No. 1 B. L. Turner, 695 ft. N of S line, 2,550 ft. E of W line of survey.
T.D. 6,100 ft.; 7-in. csg. 6,100 ft.

Stanolind O. & G. Co.'s No. 1 Ford, 330 ft. N of S line of 199.37-ac. tract and 1,725 ft. E of W line of A.C.H.&B. Sur. No. 1.
Drlg. shale 4,850 ft.

Stanolind O. & G. Co.'s No. 1 Williams, 466 ft. N, 1,126 ft. from most easterly SW cor. of 81.2-ac. lease, A.C.H.&B. Sur. No. 1.
T.D. 5,219 ft.; fishing 3,795 ft.

Stanolind O. & G. Co.'s No. 1 Grote, 460 ft.

(Continued on Page 96)

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Several Additional Deep Tests Being Started Near West Virginia Oriskany Gas Well

By STAFF CORRESPONDENT

PITTSBURGH, Pa., June 24.—Several additional deep tests are starting in lower West Virginia within 1 to 3 miles of the fair Oriskany gas well on the Campbells Creek Coal Co. In Malden district, Kanawha County, Godfrey L. Cabot, Inc., is preparing to deepen No. 7 on the Campbells Creek Coal Co. lease and the hole is being reamed for larger casing to a depth of 1,606 feet. It is on Younger Branch of Campbells Creek and is about 2 miles north of the gas well. In the same district, about 1 mile north 20 degrees west of the gas well, the same operator is building a road to a location on the W. D. Lewis lease.

In Loudin district, Kanawha County, Columbian Carbon Co. is spudding a deep test on the Kanawha City Co. lease about 3 miles south 80 degrees west of the gas well on the Campbells Creek Coal Co. In this district, Godfrey L. Cabot, Inc., has two deep tests drilling. The test of the Edgewood Realty Co. lease is drilling at 4,652 feet and is about due in the Corniferous lime. The test on the Kanawha Land Co. tract is down 690 feet.

In Malden district, this operator has reached 1,357 feet on the Plus R. Levi farm. Columbian Carbon Co. is drilling at 1,046 feet on the W. D. Lewis lease.

In Elk district, Yoak Oil & Gas Co. is shut down at 4,671 feet on the W. T. and J. H. Goshorn farm and is cementing the cave on top of the Corniferous lime. Benedum & Trees have reached 4,523 feet on the Mary C. Wingfield farm. Columbian Carbon Co. is shut down on the G. and D. Copenhaver test and is running 10-inch casing to 1,388 feet. In Jefferson district, the test of Benedum & Trees which was dry in the Oriskany is drilling well below that sand and it is now 5,200 feet.

There were 18 wells completed in the lower eastern fields during the week. Eleven were gas wells and seven were producers with an initial daily production of only 19 bbls. In addition, there were five dry holes. The majority of completions were in Southeast Ohio.

SOUTHEAST OHIO

None of the wells completed in Southeast Ohio were large. In Athens County, Gross and Frebault & Co. completed a test on the Seth Lewis farm in Section 35, Alexander Township, in the Berea grit at a depth of 1,212 feet. It is a gas well gauging 350,000 feet a day.

In Knox County, Upham Gas Co. completed a test on the Howard Fry farm in Section 12, Butler Township, in the Clinton sand and it was dry in that as well as shallower formations.

In the shallow sand area in Licking County, there were two completions. In Mary Ann Township, Lot 6, Preston Oil Co. completed a second test on the I. F. Levingston farm in the Berea sand at 391 feet. It produced 4½ bbls. the first day after shot and will make a 1-bbl. pumper. On Lot 24 of this township, William Strickler and others completed No. 11 on his own property in the same formation at a depth of 584 feet. It is a light gas well, gauging 50,000 feet, and had a light showing of oil which may not be pumped.

In Medina County, E. R. Edson & Son Co. completed No. 60 on the Edward G. Miller farm, Tract 15, Lot 12, Chatham Township, in the Berea grit at 488 feet. It produced 5 bbls. the first day after shot. On Tract 15, Lot 11, Preston Oil Co. completed No. 17 on the J. F. Grigsby farm as a dry hole in the Berea grit and a total depth of 495 feet.

In Noble County, Ferguson & McCullough completed a test on the B. M. Davis farm in Section 8, Wayne Township, in the Berea grit at a depth of 1,389 feet. It produced a half barrel the first day after shot and has about 50,000 feet of gas. In SE Section 36, Olive Township, William Patten and others completed a test on the J. B. Hutcheson farm in the Berea grit at 1,430 feet. It has about 35,000 feet a day and very little oil showing. In SE Section 34, Elk Township, C. M. Eichhorn drilled on the Leo Huffman 68-acre farm through the Injun sand to 1,301 feet. It had a very small showing of gas and no oil.

In Perry County, NE Section 33, Pleasant Township, Allegheny Oil Co. completed No. 16 on the Elizabeth Berrisford farm in the Berea sand at 1,110 feet. It made only a half barrel the first day after shot.

In Washington County, Roy F. Wichterman and others completed No. 3 on the P. D. Howiler farm, SW Section 16, Aurelius Township. It was drilled in the Berea grit at a depth of 1,665 feet and after shot the oil rose 200 feet in the casing. It will make a 2-bbl. pumper.

SOUTHWEST PENNSYLVANIA

There were two gas wells completed in Southwest Pennsylvania. In Richhill Township, Greene County, Natural Gas Co. of West Virginia completed deepening No. 1 on the T. J. Younkins farm at a total depth of 3,158 feet. The Pittsburgh Coal is at 1,026 feet, and the well was started at 3,077 feet. The top of the Gordon sand was at 3,126 feet with gas showing at 3,153 feet and the bottom of the sand at 3,157 feet. The volume is about 480,000 feet a day.

In Jackson Township, Green County, H. E. Milliken and others, drilling as Southwest Pennsylvania Corp., completed drilling deeper No. 1 on the S. B. Smith farm at 3,323 feet. The Fifty-foot sand was at 2,985-3,039 feet. At 3,029 feet there is 150,000 feet of gas which had a rock pressure of 150 pounds after 24 hours.

In Dunkard Township, Greene County, Fred Garrison has started drilling on the Ira Sykes farm. In Richhill Township, Wasmuth and Callahan are down 260 feet in No. 3 on the Daniel Goodwin heirs farm. In this township, Lewis & Co. are pulling 10-inch getting ready to skid to a new location.

In Perry Township, Greene County, Carnegie Natural Gas Co. is getting ready to drill deeper No. 1 on the Ed Haines farm. In Washington Township it will also drill deeper No. 2 on the Russell Johnson farm.

In Amwell Township, Washington County, Carnegie Natural Gas Co. is in the Salt sand on the R. M. Carrons No. 2 farm. The top of the Salt sand was at 1,595 feet with about 260,000 feet of gas showing at 1,648-52 feet. At 1,658-60½ feet 960,000 feet of gas was struck and the well shut down. The gas is decreasing. This company is grading a road to the location for No. 2 on the C. W. Dunn farm.

In this township, Manufacturers Light & Heat Co. has made a location on the C. and S. L. Hazlette farm, about 1,300 feet southwest of the good gas well on the Johns farm. This company is rigging up the second test on the R. A. Rankin farm, and has a rig completed to deepen No. 1 on the Lucinda Wright farm.

In East Findley Township, Washington County, Natural Gas Co. of West Virginia is drilling at 1,830 feet on the Wright Ealy farm. Pitroi Fuel Co. has reached 1,950 feet on the Harvey F. Taylor farm.

In Amwell Township, Washington County, Raymond Orrill and others are drilling at 2,030 feet in No. 5 on the G. L. Walker farm. F. K. Fawcett & Co. have reached 1,930 feet on the Tucker heirs farm.

In North Strabane Township, Washington County, F. D. Freeland and others are down 1,525 feet on the T. F. Clark farm. In Cecil Township, another rig is up. J. L. Morris and others are rigged up on the J. A. Augerer farm about 2,000 feet west of the good producer on the Thomas Weaver farm.

In Center Township, Greene County, Carnegie Natural Gas Co. is down 570 feet on the J. H. Orndoff farm. In South Union Township, Fayette County, the deep test of William Snee and others remained shut down.

WEST VIRGINIA

Two small producers were completed in West Virginia and additional locations were made. In Roane County, on Peniel Run in Curtis district, Kenny M. Hunt and others completed No. 2 on the Zora Blaker and others farm in the Salt sand good for 3 bbls. a day. It is 650 feet east of No. 1.

In Wayne County, Albert Ronk and others completed a test on the Albert Ronk farm on Patrick Creek in Butler district in the Berea sand showing for 2½ bbls. a day. It is 700 feet east of No. 2 on the Edward Oil & Gas Co.

Gas Wells

In Calhoun County, Southeastern Gas Co. completed a fair gas well on the Amos Smith farm in Lee district. It was drilled in the Injun sand at a depth of 2,000 feet and has over 3,500,000 feet a day, natural.

In Lincoln County, Kanawha Gas & Utilities Co. completed a test on the R. R. Sloan farm in Sheridan district at a total depth of 1,305 feet. The Big Lime started at 1,120 feet and drilling stopped at 1,303 feet. There was a volume of 428,000 feet a day at 1,300-03 feet.

In Logan County, Cumberland Petroleum Co. drilled No. 10 on the Merrill Coal Co. lease in Chapmansville district to 1,400 feet. The Big Lime was at 1,225-1,400 feet with a light showing of gas at 1,242-37 feet. It is being plugged.

In Ritchie County, there were two completions. W. H. Mosser completed a test on the G. L. Goff farm in Murphy district in the Big Injun sand at a depth of 2,025 feet. There is 92,000 feet a day from the Maxon and Injun sands. In the same district, W. H. Bickle completed No. 5 on the U. S. Fluharty farm in the Injun sand as a light gas well at 1,925 feet.

In Roane County, D. S. Fisher completed No. 3 on the Stella V. Knotts farm in Spencer district in the Injun sand at 2,267 feet. It has 84,000 feet a day, natural.

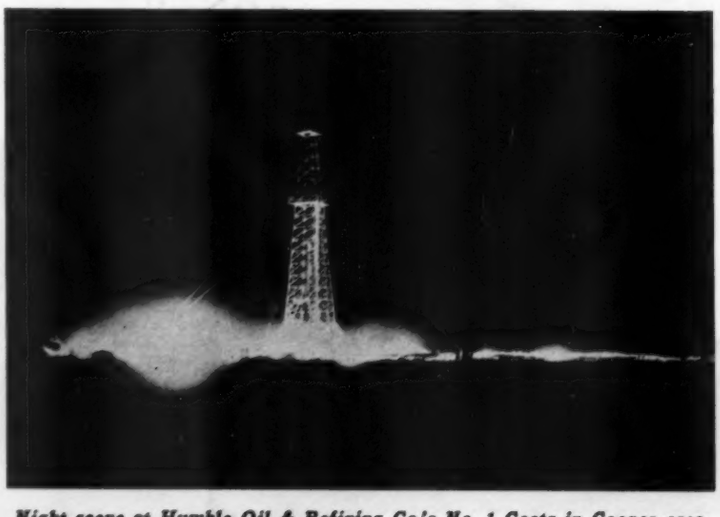
In Wetzel County, C. B. Lewis and others completed a test on the S. O. Adams farm in Proctor district at a total depth of 3,120 feet. The Pittsburgh Coal was at 1,106 feet and the Big Injun was shot at a depth of 2,330 feet with 60 quarts. It is a gas well gauging about 520,000 feet a day.

In Wood County, Bethel Oil & Gas Co. drilled a test on the D. E. McClure farm in Williams district through the Maxon sand to a depth of 1,468 feet. It was dry in all formations.

Drilling in West Virginia

In Boone County, Owens Illinois Glass Co. has additional wells under way. In Washington district, it has part of the material on the ground on the Lethia Myers farm and is spudding No. 3 on the S. M. Wheeler heirs farm. This company has a rig standing for No. 13 on the Little Coal Land Co. lease and has reached 1,207 feet in No. 21 on the Cassingham Coal Land Co. in Scott district. In Washington district, O. B. Cunningham and others are rigged up on the Dollie Workman farm and Pond Fork Oil & Gas Co. is down 625 feet in No. 21 on the Cole and Crane lease. In Sherman district, Pure Oil Co. has started drilling No. 74 on the Federal Coal Co. tract and No. 3 on the Lafollette, Robson

Picturesque Oil Well Fire in New Mexico



Night scene at Humble Oil & Refining Co.'s No. 1 Coats in Cooper area, New Mexico after gas had caught fire at relief holes drilled around the well following gas blow-out when drilling at 3,013 feet. Gas estimated at 60,000,000 feet daily

and Prichard lease. On the Peytonia Coal Land Co., Illinois Glass Co. has reached 2,247 feet.

In Cabell County, West Virginia Gas Co. is rigging up on the George W. Savage farm in McComas district. Monickle Gas Co. has reached 1,850 feet on the T. C. Bledsoe farm. On the Benjamin Bledsoe farm, R. H. Adkins, trustee, is drilling at 3,600 feet. In Guyandotte district, Merritts Creek Gas Co. is drilling at 1,200 feet.

In Calhoun County, Morley Oil & Gas Co. has made a location on the George Kee farm in Lee district. Paul Weekley and others have a location on the L. W. Little farm, same district. In Center district, A. H. Jackson has made a location on the E. R. Fluharty farm. In Washington district, J. J. Massey is drilling at 1,310 feet on the E. P. Cottrill farm and Harper Oil & Gas Co. at 1,650 feet on the O. J. Conley farm.

In Doddridge County, L. L. Shinn is drilling at 2,100 feet on the J. P. Hiley farm in Central district, a test. In Gilmer County, three wells have started. In DeKalb district, Grant Fowler and others have started drilling on the Nora V. Roberts farm. In Center district, A. E. Ellis and others have started drilling on the C. C. Pickens farm and McCall drilling Co. is down 370 feet on the G. W. Wigner farm, a test.

In Lincoln County, H. A. Waggoner, trustee, is rigging up on the Nettie May farm in Sheridan district. In Union district, Pauley and Pridemore are down 1,250 feet on the Minnie Adkins farm.

In Logan district, Southeastern Gas Co. is building a road to a location on the G. W. Mitchell farm in Logan district. In this district, Boone County Coal Co. is drilling No. 3 on its own property at 925 feet.

In Marion County, Owens Illinois Glass Co. has reached 2,280 feet on the A. T. Heck farm in Paw Paw district. In Marshall County the Cameron Light & Heat Co. is drilling at 1,700 feet on the W. R. Hughes farm.

In Raleigh County, Godfrey L. Cabot, Inc., is building a road to location for No. 9 on the Beaver Coal Co. lease in Salt Fork district and is drilling No. 8 at 1,100 feet.

In Ritchie County, L. N. Rinehart is drilling on the W. S. McGregor farm in Clay district. In Murphy district, King Knob Oil & Gas Co. is drilling No. 5 on the Emma V. Weinrick farm on Lambs Run. Deem and Burke are drilling on the James E. Tyson farm, same district.

In Roane County, K. M. Hunt and others have a rig up on the T. J. Murray 26-acre farm on Mill Creek in Curtis district about 900 feet north of the test on the Murray 4-acre tract. McIntosh & Norman have rigged up for a second test on their own property on the same stream. On Peniel Run in Curtis district Henderson Oil Co. has a location on the C. A. Burdette farm 600 feet northeast of the Alfred Moore heirs test.

Possible New Area in Putnam County Indicated by Blanchard Producer

By GEORGE A. WHITNEY
Staff Correspondent, Central West Fields

FINDLAY, Ohio, June 24.—Brown and others' No. 1, on the D. E. Geirhart farm, Section 23, Blanchard Township, Putnam County, some distance from production, made 15,000 feet of gas initial along with 10 bbls. of oil from 1,342-55 feet, and may mean opening a producing area, such as is being made in the McComb area of Henry County. Brown and others are drilling on the J. E. Shoop farm, Section 26, Pleasants Township, in Hancock County. In Seneca County, Tiffin Field, McKinney & Sons are drilling No. 3 on the Curtis Edwards farm, Section 24, Liberty Township.

In Hardin County, Walter Mier and others are drilling below 400 feet in No. 2 on the Anna Sharf farm, Section 18, Pleasants Township.

Elmer Caudill & Co. is drilling No. 4 on the Mary B. Sheetz farm, Section 30, Jackson Township, Van Wert County. H. C. Miller is drilling No. 1 James P. Davis farm, Section 5, Jennings Township. J. O. Yahn is drilling No. 9 on the Anna C. Downs farm, Section 27, Liberty Township. In Mississnawa Township, E. C. Downey is drilling No. 1 on the Ruby Rhodes farm, Section 20.

CENTRAL OHIO

In Ashland County, Ohio Fuel Gas Co.'s No. 1 on the Clare Osborn farm, Section 3, Perry Township, was dry at 2,752 feet.

In Richland County, J. B. Reed is drilling No. 1 on the Kenneth McConkie farm, in Jefferson Township. Spohn & Nachman are drilling No. 1, Uranna Freer farm, in Weller Township, same county.

In Holmes County, Ohio Fuel Gas Co. is drilling No. 1, on the Leo J. Haudenschield farm, Section 15, Washington Township, and No. 1 on the Margaret Batdorf farm, Section 15, same township. Same company has a rig for No. 1, on the Maggie Allison farm, Section 21, Monroe Township. Lydic Oil & Gas Co. has rig for No. 2, on the Gladys McDowell farm, Section 26. In Richland Township, Ohio Fuel Gas Co. has a rig for No. 2 on the Charles McFarland farm, Lot 11, and Hulse & Tedlow have a rig up for No. 1 on the Paul J. Blanchet farm, Lot 12, same township.

In Summitt County, East Ohio Gas Co. is shut down at around 300 feet in No. 1 on the Rose Lamb farm, Section 17, Green Township, and is drilling No. 3 on the William Ritter farm, Section 18, same township. Kime & Co. have a rig for No. 1 on the Jesse L. Cannon farm, Section 36, Twinsburg Township. Robinson & Co. are drilling No. 4 on the Phillip Doerr farm, Section 16, Lake Township. City Natural Gas Works is drilling No. 1, Mertz and Moyer farm, Section 14, and has a rig for No. 3 on the F. A. Ruff farm, Section 31, Rush Creek Township.

In Stark County, East Ohio Gas Co.'s No. 2 on the John Fashnacht farm, Section 8, Plain Township, is a gas well at a depth of 4,581 feet. Same company is drilling below 4,050 feet in No. 1 on the J. and L. Deetz farm, Section 21, Jackson Township, and at 3,200 feet in No. 1 on the Angeline Halter farm, Section 19, Plain Township. Same company is drilling below 2,400 feet in No. 1 on the Enos R. Mathie farm, Section 8, same township.

In Tuscarawas County, J. H. Harper is drilling No. 1 on the Oscar Kohler farm, Lot 29, Jefferson Township. Frank Phillips & Co. are drilling below 850 feet on the R. A. Stocker farm, Section 12. Oxford Township.

In Scioto County, Walter A. Wood's No. 1, Ida B. Mossbarger farm, Section 15, Bloom Township, is a light gas well at 900 feet.

INDIANA

In Gibson County, Indiana Southwestern Gas Corp. is drilling No. 2 Ada Zimmerman, SE SE Fractional Section 36, Washington Township. In Center Township, Midwest Development Corp. is drilling No. 1 on the Tony Williams farm, SW SW Section 33, and No. 1 on the William A. and Etta Hodge farm, SE NE Section 33. George W. Porter is drilling below 1,300 feet in No. 2 on the L. Kohlmeir heirs farm, NE NE Section 13, Barton Township.

In Pike County, Claud Noble is drilling No. 1 on the William S. Sibley farm, SW SW Section 6, Washington Township. A. E. Davis is drilling No. 2 on

(Continued on Page 104)

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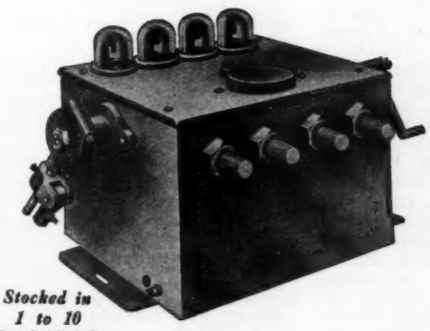

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Wildcat Gas Well in Bossier Parish, Louisiana, But Three Other Exploration Tests Are Dry

By J. R. CRUMPTON
Staff Correspondent, Louisiana-Arkansas

SHREVEPORT, La., June 24.—Plain Dealing Syndicate's No. 1 L. A. King, Section 36-23-13, a wildcat in the northern part of Bossier, developed the only results of interest in this division during the past week. True to predictions of last week, the well was completed as a fair gasser, gauging 5,592,000 feet through 2-inch tubing from a total depth of 2,840 feet. The top of the Blossom sand from which production is coming was contacted at 2,833 feet. The next seven days should either prove or condemn other wildcats in the North Louisiana district, but the six other completions reported were either small producers or dry holes.

NORTH LOUISIANA

A small gasser was reported from Catahoula Parish, George J. Phillipi's No. 2 Louisiana-Central Lumber Co., Section 2-9-6e, which gauged the small open flow of 150,000 feet under 296 pounds rock pressure from 943 feet. The well is in the vicinity of several other tests, all of which showed a gas flow with large quantities of salt water. In the Pine Island area of the Caddo Field, C. A. Tooke's No. 1 Gibbs, Section 16-20-15, is a 15-bbl. pumper from 2,224 feet. The other producer was from the old Urania Field of La Salle Parish, Monroe Production Co.'s No. 2 Winberry, Section 18-10-2e, pumping 40 bbls. from 1,521 feet.

The three dry holes in this district were all wildcats in as many separate parishes. In the northeastern part of the state in East Carroll Parish, O. G. Collins and others' No. 1 H. L. Hunt, Section 26-22-13e, was abandoned as salt water at 3,303 feet. The well had previously developed salt water with a slight show of gas on two drill stem tests from 3,046 to 3,212 feet. The top of the Nacatoch was contacted at 3,046 feet. A few miles southwest of production in the Converse Field, Sabine Parish, Laurel Petroleum Co. abandoned its No. 1 Long-Bell Lumber Co., Section 14-8-14, at 2,402 feet. The well was treated with acid at 2,283 feet. The third failure in this district during the past seven days was Ben F. Smith's No. 1 J. W. Porter, Section 25-12-13, east of the town of Mansfield in DeSoto Parish. The total depth of the test was 3,021 feet.

Two outpost tests to the Glen Rose horizon in the upper Trinity in the Rodessa Field, nothwestern Caddo Parish and the Sligo Field in Bossier Parish should be completed during the coming week. In the former area, United Gas Public Service Co.'s No. 1 I. L. Young, Section 21-23-16, is drilling 7-inch plug at 5,594 feet with the hole bottomed at 5,608 feet. Three-quarters of a mile southwest of production in the Sligo area, Triangle Drilling Co.'s No. 1-A State of Louisiana, Section 23-17-12, is arranging to make drill stem test at 4,195 feet. There are at present four producers in the Sligo Field from the upper Trinity's Oolitic lime formation from 4,200 to 4,300 feet. In addition to these two tests in deep gas territory, the United Gas is drilling two other wells in the Rodessa area, and indications are that other operators will start actively drilling in Rodessa. Several good blocks have been assembled during the past few months surrounding production and it is rumored that a well-known North Louisiana independent operator will put on an extensive drilling campaign and construct a large gasoline plant to take care of the highly saturated gas. All gas wells in Rodessa, more than 20 in number, have been drilled by United Gas Public Service Co. and Arkansas-Louisiana Gas Co., the latter a subsidiary of Cities Service. The field was discovered by R. W. Norton, independent operator of Shreveport.

New Locations

Only two new locations were staked in the North Louisiana district this week, both by the Hunter Co. of Shreveport. About 7 miles southwest of Mansfield in DeSoto Parish, this company will drill No. 1 DeSoto Corp. in Section 29-12-14. The test is located on a block of some 5,000 acres. The other well staked is located in the Zwolle Field of Sabine Parish. Two new tests recently staked in Ouachita and Jackson Parishes near the town of Eros have spudded in. American Liberty Oil Co.'s No. 1 Lusk, Section 1-16-1w, Jackson Parish, has set 12½-inch casing at 277 feet, and the same company's No. 1 Golson, Section 15-17-1e, a few miles northeast, has set 10-inch surface at 174 feet. Both tests are located on the same block of some 25,000 acres on which good surface geological reports have been rendered in addition to an extensive seismographic survey. In the southwestern part of Caddo Parish, A. D. King's No. 1 Sallie Roach, Section 4-14-16, was treated with acid at 2,712 feet and should test within the next few days. The well is reported to have shown some oil when bailed at this depth. Other North Louisiana wildcats follow: East Carroll Parish, Century Oil & Drilling Co.'s No. 1 Olive Dell, Section 56-21-12e, lubricating stuck drill stem with oil at 2,541 feet; Madison Parish, Southern Land & Exploration Co.'s No. 1 Delta Land Co., Section 1-17-12e, set 12½-inch surface casing at 200 feet; Natchitoches Parish, Clyde Crichton's No. 1 Friedman estate, Section 52-7-6, drilling in shale at 3,422 feet.

ARKANSAS

Activities in this district continues at a low ebb, a large part of the wildcats being shut down and drilling for deeper sands in the old proven areas practically at a standstill because of recent failures. Two completions were reported, both failures. In the Urbana area, Marine Oil Co.'s No. 3-A Union Saw Mill Co., Section 3-18-13, was dry and abandoned in red beds at 3,588 feet. East of production in the Rainbow Field, Ohio Oil Co.'s No. 1 S. Oliver, Section 7-17-13, was junked and abandoned at 3,055 feet. It was an old test drilled deeper from 3,048 feet to the new production sand at 3,326 feet and after failing to produce from that level was plugged back to the original pay horizon.

Gulf Refining Co.'s No. 49 L. Werner, Section 5-16-16, a deep test on the western flank of the Smackover Field, developed barren results on drill stem test during the past week. The well showed 3,500 feet of salt water through 2½-inch tubing from a total depth of 6,431 feet. It is temporarily shut down waiting on drill stem to deepen, and it may set a string of casing around the 7,000-foot level. There is no definite contract depth on the test, this depending upon what is encountered within the next 200 feet. There is a known deep seated salt dome in that area, drilled into to the east of the Gould test by Lion Oil Refining Co. about two years ago, and contacted also by H. L. Hunt, Inc.'s No. 15 E. F. Gregory in the Rainbow Field. It is possible that the present test may be off the dome, but it is reported that the well may be carried through the salt in case it is contacted. Two tests are active in the Miller County Field. M. D. K. Fitzwater's No. 1 E. H. Beck, Section 34-15-26, has set 6-inch casing at 2,910 feet, coring 5 feet of sand to a total depth of 2,917 feet. Magnolia Petroleum Co.'s No. 8 Olivet, Section 3-16-26, has set 8-inch at 2,930 feet with the hole bottomed at 2,938 feet.

MISSISSIPPI

Very few wildcats are active in this district. White & Jones' No. 1 Ballou, Section 17-24n-7w, Bolivar County, which was rigged up last fall and shut down at 20 feet, has resumed drilling, setting 10-inch at 295 feet and drilling at 870 feet. Mid-Continent Development Co.'s No. 1 Lee, Section 33-15n-8w, Washington County, is temporarily shut down at 2,175 feet in sandy shale. All other tests in this state are either shut down or have made little progress during the past two weeks.

In Covington County, Alabama, Geometer Production Corp.'s No. 1 A. B. Culbreath, Section 8-2n-14e, is drilling at 6,130 feet. DeSoto Oil & Gas Corp.'s No. 1 Gardner, Section 22-15n-16w, Lamar County, is making slow progress, drilling at 4,318 feet.

Wildcat Operations in Louisiana-Arkansas

(Rotary operations unless otherwise designated)

NORTH LOUISIANA

AVOYELLES PARISH

Bell Oil Co.'s No. 2 Thompson-Koltz, 450 ft. S, 350 ft. E. NW cor. Sec. 11-2n-5e.
Partly R.U. and S.D.

Southern Star Pet. Co.'s No. 1 O. G. Boyette, Sec. 28-3-5e.
S.D. for high wtr. 3,875 ft

BOSSIER PARISH

Bossier O. & G. Co.'s No. 2 Sherrill, 330 ft. N and W, SE cor. Sec. 13-19-12.
Set 12½-in. 126 ft.

W. A. Kirkland's No. 1 Jarrett & McKeller, 330 ft. N and W, S cor. NW NW Sec. 3-21-13.
S.D. 2,218 ft.

Leonard Co.'s No. 1 Pearson, 250 ft. S and E of C Sec. 22-21-14.
Fishing for D.S. 3,300 ft.

Plain Dealing Synd.'s No. 1 L. A. King, 200 ft. S and E, NW cor. NE NE Sec. 36-23-13.
Comp.; 5,600,000 ft. of gas, 2,840 ft.

Richplane Oil Co.'s No. 1-A S. H. Bollinger, Sec. 22-22-13.
Drlg. 910 ft.

R. L. Skidmore et al's No. 1 Davis, Sec. 12-18-13.
S.D. 1,710 ft.

Triangle Drlg. Co.'s No. 1-A State of La., Sec. 23-17-12, 1,000 ft. E. 2,640 ft. S, NW cor.
Testing 4,195 ft.

CADDO PARISH

Nick Babare's No. 1 Gibbs, Sec. 16-20-15, W.O.S.R. 2,245 ft.

Babare and Ark.-La. Gas Co.'s No. 1 fee, NE cor. SE SE Sec. 16-20-15.
Drlg. 1,400 ft.

J. Ed Bailey, tr.'s No. 1 Hartzo, NW cor. NE NW Sec. 28-22-16.
S.D. 1,236 ft.

Barnsdall Oil Co.'s No. 2 School fee, SE cor. NW SE Sec. 16-20-15.
Set 6-in. 2,220 ft.

Cal-La. Devel. Co.'s No. 1 Glassell, NW NE Sec. 11-19-15.
Set. 10-in. 40 ft.

Holly Oil Co.'s No. 1 Thigpen & Herold, Sec. 15-20-15.
Set 6-in. 2,227 ft.

Hillman et al's No. 1 J. S. Noel Est., NE NE Sec. 12-20-16.
Testing 1,514 ft.

F. D. Hyde's No. 1 Thigpen & Herold, 350 ft. S and E, C Sec. 5-15-15.
Drlg. 50 ft.

A. D. King, tr.'s No. 1 Roach, 641 ft. E. 375 ft. N. SW cor. SE Sec. 4-14-16.
Used acid; W.O. 2,712 ft.

Leonard Co.'s No. 1 M. A. Dickson, 1,650 ft. S, 1,260 ft. E, NW cor. Sec. 36-21-15.
Coring 2,221 ft.

Leonard Co.'s No. 2 Green, SW SW Sec. 4-26-15.
Drlg. 515 ft.

Murray Oil Co.'s No. 2 Noel, 495 ft. S, 735 ft. E, NW cor. SW Sec. 15-20-15.
Rigging up.

Press & Lambert's No. 2 Hughes, 350 ft. N and W of C Sec. 15-20-15.
Rigging up.

Recovery Oil Co.'s No. 1 W. L. Sibley, Sec. 15-19-14.
Arranging to set csg. 2,448 ft.

J. T. Reese's No. 1 Waskom, 330 ft. S and W, NE cor. Sec. 30-19-16.
S.D. 1,030 ft.

Texas Co.'s No. 4 School fee, Sec. 16-20-15.
Drlg. 2,175 ft.

A. C. Scott et al's No. 1 Noel Est., 330 ft. S and E, NW cor. Sec. 22-20-15.
W.O.S.R. 2,261 ft.

Shreveport Oil Corp.'s No. 5-B Muslow, 150 ft. S, 1,320 ft. E, NW cor. Sec. 9-20-15.
W.O.S.R. 2,174 ft.

Texas Co.'s No. 2 Thigpen, 300 ft. S and E, C Sec. 15-20-15.
Set 6-in. 2,182 ft.

C. A. Tooke's No. 1 Gibbs, NE SE Sec. 16-20-15.
Comp.; pumping 15 bbls., 2,224 ft.

CALDWELL PARISH

Critchell & Woods' No. 1 Kraft, 330 ft. N and W, SE cor. NW NE Sec. 18-11-3e.
Reaming to bottom 1,710 ft.

G. D. Davis' No. 1 La.-Cen. Lbr. Co., Sec. 14-11-3e.
Washing to bottom 1,850 ft.

G. W. Zeigan et al's No. 1 La.-Central Lbr. Co., 175 ft. S and E, NW cor. SW SW Sec. 25-13-3e.
S.D. 569 ft.

CATAHOULA PARISH

Geo. J. Phillips' No. 1 La.-Central Lbr. Co., 127 ft. N, 2,490 ft. W. SE cor. Sec. 2-9-4e.
Comp.; 150,000 ft. gas, 943 ft.

CLAIBORNE PARISH

E. T. Oakes' No. 1 H. W. Patton Est., 660 ft. S and W, NE cor. Sec. 1-20-5w.
Set 12½-in. 654 ft.

DESOTO PARISH

E. B. Bird et al's No. 1 J. H. Johns, 330 ft. N and W, center Sec. 20-14-6.
S.D.; W.O. 2,630 ft.

DeSoto Pet. Co.'s No. 1 B. Y. Wemple, C S½ SE NE SW Sec. 14-12-11.
Arranging to set csg. 2,590 ft.

E. L. Foster's No. 1 Youngblood, Sec. 9-11-14.
Set 7-in. 2,735 ft.; T.D. 2,860 ft.

P. G. Fraley et al's No. 1 G. R. Stell, 330 ft. S and W, NE cor. Sec. 5-12-16.
R.U. and S.D.

Leslie Prod. Co.'s No. 1 Ramsey, 150 ft. N and W of C Sec. 36-11-11.
Set 10-in. 45 ft.

National Oils, Inc.'s No. 1 B. Y. Wemple, NW SW Sec. 14-12-11.
S.D. 120 ft.

C. T. Ruffins' No 1 Lee, 400 ft. S, 334 ft. E, NW cor. SW Sec. 33-14-13.
Set 7-in. 2,785 ft.

Ben F. Smith et al's No. 1 Porter, 330 ft. N and E, SW cor. NW Sec. 25-12-13.
Dry and abd. 3,021 ft.

Ed Saffold et al's No. 1 Thigpen, 400 ft. S, and 308 ft. W, NE cor. SW NE Sec. 33-13-13.
W.O.S.R. 1,730 ft.

EAST CARROLL PARISH

Century Oil & Drlg. Co.'s No. 1 Olive Dell, 660 ft. S, 300 ft. W, NE cor. Sec. 56-21-21e.
Lubricating stuck D.S. 2,541 ft.

(Continued on Page 99)

Crude Oil Production

Estimated daily average crude oil production for the week ending June 22 follows:

NORTH LOUISIANA

Bellevue	550
Caddo, light	5,025
Caddo, heavy	1,980
Converse	1,230
Cotton Valley	450
DeSoto and Red River	1,410
Elm Grove	400
Haynesville	3,415
Holly	150
Homer	2,665
Pleasant Hill	165
Sarepta-Carterville	630
Urania	3,000
Zwolle	1,835
Total	22,815

SOUTH ARKANSAS

Champagnolle	2,300
El Dorado	2,200
Lisbon	310
Miller County	1,485
Nevada	350
Smackover, light	2,285
Smackover, heavy	18,540
Stephens	630
Urbana	2,625
Total	30,865

Michigan Operators Are to Continue Voluntary Proration Plan to Stabilize Crude Market

By PAUL A. ELLIOTT
Staff Correspondent, Michigan Fields

MUSKEGON, Mich., June 24.—Faced with an all-time record daily production, major extension of the new Crystal Township, Montcalm County, Pool, steady increases in several other central Michigan fields and the termination of the petroleum code regulations by the recent Supreme Court decisions, leading operators and directors of the Oil and Gas Association of Michigan met today in Mount Pleasant to consider a voluntary proration plan.

The meeting was called by Howard D. Atha, president, after directors of the association unanimously passed a resolution urging the perpetuation of the Michigan Petroleum Proration Committee as a volunteer unit to assist producers in maintaining a stabilized market for Michigan crude.

It was proposed the committee composed by James C. Graves, chairman; Howard D. Atha, vice chairman; E. F. Claggett, secretary; George B. Talbot, treasurer, W. A. Hower, George Fink and C. L. Maguire be continued and directed to hold meetings once a month.

Crystal-Montcalm

Completion of a new 250-bbl. producer about 1¼ miles north of the discovery well last week, was heralded as the most encouraging development in the Crystal area since it was opened March 28 by J. W. Leonard, Jr., and others' No. 1 Durbin.

The new well was brought in by the Burnstein Oil & Gas Corp. on the No. 1 Joseph J. Keel, SW SE SE Section 35-11n-5w, Ferris Township, Montcalm County. Oil and gas pay sands were first encountered at 3,180 feet and the well started flowing at the rate of 20 bbls. an hour when drilled 6 feet in to 3,186 feet. Joseph Burnstein and Sam Garfield, the operators, were considering possible deepening for increased flow after setting up additional storage tanks.

Although initial production ranging from 2,500 to 3,000 bbls. a day had been encountered within half a mile west of the discovery and a 700-bbl. well three locations north and three west in addition to one small north offset to the Durbin, the Burnstein-Keel, is considered of greater importance as the farthest extension well yet finished.

Success of the Keel test also was of particular interest because of the unexpected result in the Gulf-Barger well finally completed after several weeks of testing with an initial rating of 240 bbls. a day despite 50 per cent flow of water on a direct north offset location from the Durbin, as yet the largest well in the field with its initial flow of about 5,000 bbls.

Two other successful completions also were recorded last week in the Crystal area, one a 1,000-bbl. oil well on the farthest west extension along "Wall Street," and the other a 1,500,000-foot gas well in New Haven Township, Gratiot County.

The larger oil well of the week was Snowden & McSweeney's No. 1 Wight heirs, NE NE NE Section 10-10n-5w, Crystal Township, rated at 1,000 bbls. a day at a total depth of 3,192 feet as the west offset to the McClanahan-Flint well, also on the south side of "Wall Street" about a half mile directly west of the discovery. It also may be deepened for greater flow.

J. E. Evans and V. M. Voorhees also completed their No. 1 Margaret Yats, NW NW SW Section 6-10n-4w, New Haven Township, with an initial flow of 1,500,000 feet of gas from the Michigan Stray sands topped at 1,001 feet and drilled to 1,006 feet. It has been tubed and shut in as the second commercial well in the area indicating possibilities of further natural gas developments.

The only disappointment in the Crystal area last week was occasioned by the failure of the Newark Gas & Oil Syndicate's No. 1 George Beck, NE SE NE Section 29-10n-3w, Newark Township, Gratiot County, which drilled into bottom water at 3,185 feet after topping the Dundee limestone at 3,148 feet and had a show of oil and gas at 3,155 feet. It may be deepened to test the Monroe.

Two important tests are being drilled by T. F. Caldwell, Inc., the No. 1 W. W. Robbins, NE NE NE Section 3, Crystal Township, about a mile north and half a mile west of the discovery, and the No. 1 M. L. Johnson, NE NW NE Section 14, located a mile due south of the Durbin. The Robbins test topped the Traverse at 2,717 feet, had a light show of oil and gas at 2,742 feet and was drilling at more than 3,000 feet, while the Johnson topped the Traverse at 2,725 feet and also was more than 3,050 feet deep.

J. W. Leonard, Jr., trustee's No. 2 C. R. West estate, north offset to the same operator's successful No. 1 West well and west offset to the questionable Gulf-Barger No. 1, also was drilling at more than 3,000 feet after topping the Traverse at 2,746 feet. It is located SE SE SW Section 2, Crystal Township.

In Section 3, same township, Gordon Oil Co. topped the Traverse at 2,740 feet in the No. 1 Frost heirs, SE SE SW, and had reached a depth of about 3,000 feet. Because it is located at the extreme west edge of the proved field it is being closely watched.

Crystal-Gratiot

Rex Oil & Gas Co.'s No. 1 Morse & Biddle, NW SW SW Section 20, New Haven Township, was cased at 3,159 feet preparatory to drilling into the Dundee this week as the probable next completion in the two Gratiot County Townships of New Haven and Newark adjoining Crystal Township. Traverse was topped at 2,710 feet and a show of gas encountered at 2,737 feet in this test.

Strange & Fortney also were about ready to set casing above the Dundee in the No. 1 Bovee, NW NE SW Section 7, New Haven Township, as the week closed with possible completion this week.

T. F. Caldwell, Inc., reported the No. 1 Federal Land Bank, NW SW SW Section 18, New Haven Township, running about 25 feet high at the top of the Traverse at 2,680 feet with half a dozen new tests to be started soon in this vicinity. It was drilling at more than 2,700 feet deep late last week.

Crystal Oil Co.'s No. 1 John Shaver, NW NW NE Section 4, Newark Township, also was more than 2,700 feet deep, while McClanahan Oil Co.'s No. 1 Arthur Akin, SE SE NE Section 17, New Haven Township, was still shut down after striking water the week before.

Other Montcalm Tests

C. C. Goff and Frank Rabuck drilling the No. 1 Frank and Clara Williams, NE SW NE Section 14-12n-7w, Belvidere Township, Montcalm County, failed to strike gas in commercial quantities in the Michigan Stray sands and decided to plug and abandon the hole at 1,284 feet. It is located three-quarter of a mile southeast of the Michigan Exploration Co.'s 7,000,000-foot gasser completed in Belvidere Township several months ago.

Daily Crude Oil Co.'s No. 2 H. J. Hansen, SE NE NW Section 10-12n-6w, Home Township, same county, set 5-inch casing at 3,050 feet and was expected to drill into the upper Traverse pay sands as an offset to the No. 1 Hansen producer in the Edmore Pool this week.

L. G. Thompson was preparing to plug back to the Michigan Stray gas sands in his No. 1 J. K. Knapp, E SE NE Section 17-12n-9w, Winfield Township, in which a flow of about 8,000,000 feet was encountered on the way to recent unsuccessful testing of the Dundee. This well is located in the northwest corner of the county near the village of Amble and near Howard City.

Several miles distant, James E. Flanagan was redrilling the No. 1 Mrs. Henry Eiknroch test, NE NE NW Section 13-11n-10w, Pierson Township, same county, in the hope of developing commercial gas production in a hole shut down for several months after L. E. Duvall, the original operator, was unsuccessful with a fishing job on a string of tools in the hole since last fall. It was about 1,100 feet deep with about 200 feet to go.

Mecosta County

The Hal-Be-Oyle & Gas Co.'s No. 1 Taggart Brothers, Inc., C SE NE Section 10-14n-8w, Austin Township, Mecosta County, was brought in with an initial flow of about 1,000,000 feet on a location about a quarter of a mile from two larger producers, one good for 14,400,000 feet when originally completed about a year ago and the other a 7,000,000-foot well several months ago. The new well may be deepened.

The same operators also expected to drill in their No. 2 Taggart, C NE NE Section 10, within a few days.

Lakeside Gas & Oil Syndicate's No. 1 Thomas Percy, C SE NE Section 22-15n-8w, Martiny Township, failed to strike commercial gas pay in the Michigan Stray sands and was shut down at 1,400 feet awaiting a decision whether to deepen to test the Dundee.

Jetter Oil Co.'s No. 1 Daniel Pursley, NE SW SW Section 19-14n-10w, Mecosta Township and county, was drilling in the Monroe at about 3,350 feet deep after being unsuccessful in the Dundee.

Bryan & Martin's No. 1 William Caldwell, C SE NW Section 26-13n-7w, Millbrook Township, Mecosta County, also was reported dry at 1,284 feet after failure to strike gas in the Michigan Stray sands.

Renewed interest in Ogemaw County drilling already has been evidence as the result of the production of about 35 bbls. of oil intermittently over a period of a week from Thompson Brothers, Inc.'s No. 1 Mills Estate test, NW SE SW Section 31-21n-1e, Richland Township, a wildcat located about 8 miles from previous production in Section 6, Mills Township. Although a comparatively small well despite acid treatment, the Mills Estate well was considered of importance for possible southeast extension of the Ogemaw structure.

Melling Oil & Gas Co.'s No. 2 State of Michigan, SW SE NW Section 6-21n-3e, Mills Township, also was completed as the largest new producer in Ogemaw County in recent months. It pumped 150 bbls. from the Dundee after acid treatment and after flowing 275 bbls. before being placed on the pump. Same operator's No. 3 State of Michigan, NE NE NW Section 6, topped the Dundee at 2,446 feet and was drilling in at more than 2,500 feet.

Paul R. Cash's No. 2 Wobig heirs, NW SW NE Section 6, same township, also was drilled in and produced about 30 bbls. in the first hour of pumping. It will be treated with acid for a probable increase this week.

Frank C. Patterson and Otto F. Louis also completed their No. 2 William J. Price, SE SW SE Section 31-22n-3e, Churchill Township, Ogemaw County, producing 85 bbls. in the first 28 hours. It will be treated with acid again.

L. G. Thompson's No. 1 William Price, NW SW NE in the same section, was still shut down after failure to develop commercial production in the Dundee.

Ide Oil & Gas Corp.'s No. 2 Jane M. Donovan, SE SE NW Section 19-22n-2e, West Branch Township, same county, also was completed as a 50-bbl. well after several months of hard luck drilling and fishing. Dundee limestone was topped at 2,575 feet and drilling completed at 2,739 feet. The No. 3 Donovan on the same lease also was cased at 2,580 feet and will be drilled in this week.

Muskegon Development Co.'s No. 2 Arthur Fisk, SE SE NE Section 29, West Branch, was listed in the final completion report last week with an initial production of 35 bbls. in the Dundee topped at 2,516 feet and bottomed at 2,660 feet.

Isabella County

Henry L. McEvoy's No. 2 Stanley Demski, SE SW SE Section 28-15n-3w, Denver Township, Isabella County, topped the Dundee at 3,572 feet, hit the pay sands at 3,609 feet and drilled to 3,612 feet. It made 200 bbls. natural and was estimated good for 500 bbls. after acid treatment.

Gordon Oil Co.'s No. 1 George Prout, NW NW NW Section 18, same township, flowed 160 bbls. during the first 24 hours after topping the Dundee at 3,655 feet and drilling to a total of 3,700 feet. It extends the Leaton Field about a mile northward.

Spring Brothers also drilled Karl K. Leibran, trustee's No. 1 Shaffer, NE NW NW Section 10-14n-3w, Chippewa Township, into the Dundee pay sands but later plugged and abandoned it. It filled up several hundred feet at a total depth of 3,610 feet. Dundee was topped at 3,554 feet. The oil showing was too light to justify acid treatment, it was decided.

Although W. Hunter Atha struck a flow of about 50,000 feet a day of gas in the Michigan Stray sands in his No. 1 Harriger, Section 31-16n-4w, Vernon Township, it was plugged and abandoned at 1,510 feet.

Midland County

Two new producers aggregating about 1,000 bbls. daily initial after acid treatment were the largest wells completed in the Porter Township, Midland County, Field in several weeks when finished last week.

Pure Oil Co.'s No. 3 Frank Howland, SW NW NW Section 23-13n-1w, Porter, made 575 bbls. a day from the Dundee at a total depth of 3,407 feet. It flowed 135 bbls. natural after being produced as a 60-bbl. upper Traverse well for several weeks. Pure's No. 6 C. D. Alexander, SE SE SE Section 18, same township, made 400 bbls. a day after acid treatment for an initial of 150 bbls. The Dundee was topped at 3,359 feet and the hole plugged back to 3,411 feet after drilling into water at 3,415 feet.

Spirited Bidding at New Mexico Sale of Leases; Good Showing to North of Monument Pool

By TOLBERT R. INGRAM
Staff Correspondent, Rocky Mountain Area

DENVER, Colo., June 24.—Spirited bidding at the sale of New Mexico leases on state land resulted in the sale of 28 tracts for bonuses aggregating $26,206. Texas Co.'s No. 1 Saunders, a wildcat 3 miles north of production in the Monument Pool, has several good shows of gas. Ohio Oil Co.'s No. 3 State-McDonald, 4 miles south of Eunice Pool, was completed for 248 bbls. an hour through the 6-inch with valve two-thirds closed. Rowan Drilling Co.'s No. 1 Elliott, east of the Ohio's State-McDonald, was plugged and abandoned. Two new locations were made in Eunice Pool. One completion and two new locations were reported in Cooper Pool, Empire Gas & Fuel Co.'s No. 4 Everett, flowing 194 bbls. in 24 hours. There was one completion in Jal Pool, Empire Gas & Fuel Co.'s No. 2 Dyer making 250 bbls. of oil natural and 60 bbls. of water. Premier Petroleum Corp.'s No. 1-E Dexter, Maljamar area, Eddy County, was completed for 75 bbls. Rio Arriba County is to have an important test on the Elvado structure. The Elmer Hill well in Santa Fe County is abandoned.

In Colorado, Stanolind Oil & Gas Co.'s No. 16-SD Shaw was completed for 62 bbls. an hour. Archuleta County is to have another wildcat on the Price structure.

Ohio Oil Co. is starting a deep test on the Two Rivers structure in Albany County, Wyoming, and Continental Oil Co. will make a test of the Embar-Tensleep in the Big Muddy Field. General Petroleum Corp. of California has taken over the Reeder operation in Carbon County. One new location was made by Ohio Oil Co. in Lance Creek.

Cut Bank, Montana, had eight completions and six new locations, one well, Gardner-Smith's No. 1 Tweedy, being an important extension. Two completions, one well abandoned and two new locations were reported in Kevin-Sunburst Field.

NEW MEXICO

Oil and gas leases on 28 tracts of state land, mostly in Lea County, were offered at auction at Santa Fe on June 10 by the commissioner of public lands of New Mexico and resulted in the sale of leases on all tracts offered for an aggregate of high bids of $26,206.85. Humble Oil & Refining Co. secured leases on eight tracts. Six bids were submitted on Tract 3 and five on Tract 6.

Tract 1—920 acres in Sections 26 to 30-13s-36, Ohio Oil Co., $791.91.

Tract 2—720 acres in Sections 31, 32 and 36-13s-36, Shell Petroleum Corp., $288.

Tract 3—493 acres in Sections 2, 3 and 4-15s-34, Bertha M. Church, Los Angeles, $1,482.

Tract 4—600 acres in Sections 10, 13 and 14-15s-34, Humble Oil & Refining Co., $1,260.

Tract 5—680 acres in Sections 15, 16, 17 and 21-15s-34, Devonian Oil Co., $1,271.20.

Tract 6—680 acres in Sections 15, 16, 17 and 23-15s-34, Devonian Oil Co., $1,543.63.

Tract 7—563 acres in Sections 29 and 30-15s-34, Humble Oil & Refining Co., $1,054.46.

Tract 8—682 acres in Section 31 and 32-15s-34, Humble Oil & Refining Co., $1,275.66.

Tract 9—792 acres in Section 3, 4 and 5-16s-34, Humble Oil & Refining Co., $1,481.13.

Tract 10—759 acres in Sections 5, 6 and 7-16s-34, Humble Oil & Refining Co., $1,420.32.

Tract 11—399 acres in Sections 1, 7, 12 and 13-17s-28, Manuel A. Sanchez, Santa Fe., N. Mex., $220.

Tract 12—400 acres in Sections 14, 19, 24 and 35-17s-28, Manuel A. Sanchez, $225.

Tract 13—400 acres in Sections 7, 8, 9 and 19-17s-29, Manuel A. Sanchez, $205.

Tract 14—480 acres in Sections 31, 32 and 36-17s-29, George M. Cowell, Los Angeles, $120.

Tract 15—840 acres in Sections 2-17-31, 32-17-32 and 1 and 2-17-33, Manuel A. Sanchez, $251.91.

Tract 16—540 acres in Sections 2 and 4-16s-35, Humble Oil & Refining Co., $1,231.04.

Tract 17—360 acres in Sections 10 and 12-16s-35, Devonian Oil Co., $1,450.

Tract 18—360 acres in Sections 14 and 17-16s-35, Humble Oil & Refining Co., $820.80.

Tract 19—638 acres in Sections 18 and 19-16s-36, Cary P. Butcher, Midland, Tex., $637.70.

Tract 20—520 acres in Sections 21 and 22-16s-35, Carl P. Butcher, $520.

Tract 21—160 acres in Section 17-21s-35, C. A. Larrazado, Jr., Albuquerque, N. Mex., $195.

Tract 22—160 acres in Section 5-21-35, 16-22-34 and 13-23-34, A. E. Smith, Midland, Tex., $802.

Tract 23—920 acres in Sections 32-21-38 and 32-22-38, Gypsy Oil Co., $4,600.

Tract 24—120 acres in Sections 2 and 9-23s-34, Henry T. Moore, El Paso, Tex., $124.

Tract 25—320 acres in Section 32-24s-36, Sun Oil Co., $361.60.

Tract 26—160 acres in Section 30-25s-38, Shell Petroleum Corp., $1,520.

Tract 27—119 acres in Sections 31-21-34 and 32-22s-38, Humble Oil & Refining Co., $803.73.

Tract 28—398 acres in Sections 2, 16, and 21-20s-28 and 2-20s-29, Robert C. Folk, El Paso, $210.

Lea County—Monument Area

Amerada Petroleum Corp. has relocated No. 1 Andress approximately 660 feet south and 400 feet east of the NW cor. Section 12-20-36, immediately west of the location abandoned last week.

Texas Co.'s No. 1 Saunders, C SE SW Section 18-19-37, 3 miles north and east of the discovery, which will show the trend, is bottomed at 3,500 feet in lime and reaming 27 feet off bottom. It had gas shows at 2,945-57, 3,275-85 and 3,475 feet. A drill stem test at 2,967-3,375 feet showed some gas and 320 feet of drilling mud in 30 minutes and another at 2,840-2,930 feet showed 50,000 feet of gas in the same time.

Amerada Pet. Corp.'s No. 1 Andrews, W NW NW Sec. 12-20s-36.
Location.
Jeffers Oil Co.'s No. 1 Britt, C SE NW Sec. 7-20-37.
Spudding with machine.
Shell Pet. Corp.'s No. 1-E State, C SE SE Sec. 35-19-36.
Drlg. plug at 3,820 ft.; 7-in. set at 3,800 ft. with 135 sacks; drill stem test at 3,750-3,800 ft. showed 180 ft. of mud.
Twin States Oil Co.'s No. 1 Weir, C NE SE Sec. 35-19-36.
Name changed from Sun Oil Co.; rigged and ready to spud.
Superior Oil Co.'s No. 1 State, C NE NE Sec. 2-20-36.
T.D. 2,344 ft. in anhydrite; W.O.C.; 9⅝-in. at 2,314 ft. with 450 sacks.
Texas Co.'s No. 1 Saunders, C SE SW Sec. 19-19-37.
T.D. 3,500 ft. in lime; reaming 27 ft. off bottom.

Eunice Area

Ohio Oil Co.'s No. 3 State-McDonald, C NE SW Section 16-27-36, 4 miles south of the nearest producer, is one of the outstanding discoveries of the year in Lea County. It was completed at 3,816 feet and flowed 248 bbls. an hour with approximately 51,000,000 feet of gas, with the 6-inch gate one-third open and a back pressure of 400 pounds on the 3-inch. It tested 5 bbls. of oil and 1,000,000 feet of gas an hour at 3,781 feet and 6 bbls. and 250,000 feet at 3,814 feet. It entered the main pay at 3,814-16 feet. The 7-inch is at 3,687 feet and tubing at 3,756 feet. Elevation is 3,562 feet.

The well abandoned is Rowan Drilling Co. and others' No. 1 Elliott, C NE SW Section 17-22-37, a wildcat 5 miles east of Ohio's No. 3 State-McDonald and 3 miles east of No. 1 State-McDonald, a gas well. It was drilled to 4,075½ feet and had sulphur water at 4,008-14 feet. It was plugged back to 3,760 feet where it tested dry. It is a farm-out from Continental Oil Co. Elevation is 3,400 feet.

The near completion is Continental Oil Co. and California Co.'s No. 30-A-2 Lockhart, C NE NE Section 30-21-36, which will prove one 40-acre unit on the west side. It is testing at 3,942 feet and flowing 300 bbls. daily through the tubing.

One new location is Gypsy Oil Co.'s No. 1 Orcutt, C SE NW Section 5-21-36, most northerly operation in the pool and a north offset to Atlantic's No. 1-E State, which proved one unit on the north. It is building rig. The other is Repollo Oil Co.'s No. 3 Adkins, SW SW SE Section 9-21-36, an outside well, an offset on the southeast to the Continental's No. 9-B-3 Meyers.

Amerada Pet. Corp.'s No. 1 Houston, C SE NE Sec. 7-21-36.
T.D. 3,810 ft. in lime; drill stem test at 3,686-3,810 ft. showed 690 ft. of mud and 555,000 ft. of gas in 25 minutes.
Atlantic Oil Prod. Co.'s No. 2-C State, C SE SE Sec. 5-21-36.
Location.
Atlantic Oil Prod. Co.'s No. 1-G State, C SE SW Sec. 5-21-36.
T.D. 1,370 ft. in salt; running 8¼-in.
Continental Oil Co.'s No. 20-C-5 State, C SW SW Sec. 20-21-36.
T.D. 3,850 ft.; drlg. plug; 5½-in. at 3,798 ft. with 400 sacks; drill stem test at 3,800-50 ft. showed 150,000 ft. of gas in 20 minutes.
Continental Oil Co.'s No. 9-B4 Meyers, C NE NW Sec. 9-21-36.
Drlg. 2,830 ft. in anhydrite.
Continental Oil Co.'s No. 30-A-2 Lockhart, C NE NE Sec. 30-21-36.
T.D. 3,850 ft. in lime; 5½-in. at 3,802 ft.; testing; flowing 300 bbls. daily through tubing.
Empire G. & F. Co.'s No. 1-S State, NW NW SW Sec. 16-21-36.
Drlg. 2,604 ft. in anhydrite and salt; 9⅝-in. at 1,735 ft. with 500 sacks.
General Crude Oil Co.'s No. 1-D State, C NW SW Sec. 32-21-36.
S.D. 70 ft.
Gypsy Oil Co.'s No. 1 Orcutt, C SE NW Sec. 5-21-36.
Bldg. rig.
Humble O. & R. Co.'s No. 4-B State, C NW NE Sec. 29-21-36.
Spud. June 7; 12½-in. at 81 ft., with 120 sacks; drlg. 1,205 ft. in red beds and shells.
Repollo Oil Co.'s No. 3 Adkins, SW SW SE Sec. 9-21-36.
Location.
Shell Pet. Corp.'s No. 1-A State, C SE NE Sec. 12-21-35.
T.D. 4,404 ft.; P.B. to 3,926 ft.; shot and cleaned out to 3,904 ft.; will run liner.
Skelly Oil Co.'s No. 3-B State, C NE NW Sec. 16-21-36.
Drlg. 3,613 ft. in lime; show oil and gas at 3,519-28 and 3,536-57 ft., and show of gas at 3,613 ft.

Cooper Area

Empire Gas & Fuel Co.'s No. 4 Everett, C SW SW Section 35-24-36, an inside location at the southern end, was completed at 3,898 feet and flowed 194 bbls. in 24 hours with 500,000 feet of gas through 3-inch tubing at 3,486 feet. The pay was at 3,846-98 feet and elevation is 3,265 feet.

Atlantic Oil Producing Co. and Kirby Petroleum Co.'s No. 1 Woolworth, C SW NE Section 26-24-36, is rigging up rotary. Humble Oil & Refining Co.'s No. 1 Mosely, C SE SE Section 10-24-36, is building rig, a north offset to Amerada Petroleum Corp.'s No. 2 Isbell and three-quarters of a mile south of its No. 1 Coats, a recent north extension.

Skelly Oil Co.'s No. 1 Coats has changed its location from the C SE SW to the C SW SE Section 3-24-36, direct north offset to Humble's No. 1 Coats. It is the most northerly operation in the pool.

Simms Oil Co.'s No. 1 Woolworth, C SE NE Section 35-24-36, which proves one unit on the east side in the southern part of the field, is a near completion. It is bottomed at 3,466 feet and flowing 30 bbls. per day with 10,000,000 feet of gas. It will acidize. This well has been delayed by a gas blowout, estimated at 80,000,000 feet a day, at 3,406 feet last January.

Amon G. Carter and others' No. 1 Mattix, C SE NW Section 3-24-37, a wildcat 6 miles northeast of the Cooper Pool, is bottomed at 3,663 feet in shale and lime with 2,000 feet of oil in the hole. The main oil was at 3,570-74 feet. It rose 100 feet in one hour and 1,700 feet in 12 hours and swabbed 40 bbls. of 38.7 gravity oil in 24 hours. There were increases in the oil at 3,615-20, 3,645-52 and 3,630-36 feet.

Amerada Pet. Corp.'s No. 2 Isbell, C NE NE Sec. 15-24-36.
T.D. 3,558 ft.; tested through tubing with packer at 3,555 ft. and showed 1,000,000 ft. of dry gas.
Amerada Pet. Corp.'s No. 3 Everett, C NE SE Sec. 34-24-36.
Drlg. 1,560 ft. in anhydrite and salt.
Amos G. Carter et al's No. 1 Matti, C SE NW Sec. 3-24-37.
T.D. 3,663 ft.; 2,000 ft. of oil in hole, mostly from 3,570-74 ft.; swabbed 40 bbls. in 24 hrs.; increases at 3,615-20, 3,645-52 and 3,630-36 ft.
Atlantic Oil Prod. Co. and Kirby Pet. Co.'s No. 1 Woolworth, C SW NE Sec. 26-24-36.
Rigging up rotary.
Continental Oil Co.'s No. 27-A-1 Gates, C SE SE Sec. 27-24-36.
Location.
Continental Oil Co.'s No. 14-A-4 Vaughn, C NW NW Sec. 14-24-36.
Location.
Continental Oil Co.'s No. 14-A-3 Vaughn, C SW NW Sec. 14-24-36.
T.D. 1,775 ft.; W.O.C.; 7⅝-in. at 1,774 ft. with 500 sacks.
Continental Oil Co.'s No. 15-A-3 Vaughn, C NE SE Sec. 15-24-36.
Drlg. 1,340 ft. in anhydrite.
Continental Oil Co.'s No. 15-A-2 Vaughn, C SW SE Sec. 15-24-36.
Location.
Continental Oil Co.'s No. 23-A-2 Gates, C NW NW Sec. 23-24-36.
Rig.
Humble O. & R. Co.'s No. 2 Coats, SWL NW NE Sec. 10-24-36.
S.D. 3,394 ft.; preparing to drill deeper.
Humble O. & R. Co.'s No. 1 Mosely, C SE SE Sec. 10-24-36.
Bldg. rig.
Humble O. & R. Co.'s No. 1 Thomas, C SW SE Sec. 22-24-36.
T.D. 2,586 ft.; plugged back to 3,470 ft.; preparing to drill 20 ft. of plug; will run 7-in.
Simms Oil Co.'s No. 1 Woolworth, C SE NE Sec. 35-24-36.
T.D. 3,466 ft. in lime; flowing 30 bbls. per day with 10,000,000 ft. of gas; will acidize.
Skelly Oil Co.'s No. 1 Coats, C SW SE Sec. 3-24-36.
Location changed from C SE SW.
Stanolind O. & G. Co.'s No. 4-A Meyers, C NE NW Sec. 22-24-36.
T.D. 3,605 ft.; P.B. to 3,537 ft.; swabbed 40 bbls. in 1 hr., 90 per cent water; preparing to put on pump.
Texas Co.'s No. 3-B Ogg, C NE NE Sec. 34-24-36.
T.D. 3,370 ft.; 7-in. at 3,303 ft. with 175 sacks.
Tide Water Oil Co.'s No. 1 Woolworth, C SW SE Sec. 26-24-36.
Spud. June 6; set 12½-in. at 182 ft. with 125 sacks; drlg. 665 ft. in red beds.

Jal Area

Empire Gas & Fuel Co.'s No. 2 Dyer, NW cor. SE Section 31-25-37, was completed at 3,285 feet and flowed 250 bbls. of oil and 60 bbls. of sulphur water with 1,000,000 feet of gas through 3-inch on a three-quarters inch choke in 24 hours after treating with 1,000 gallons. The pay was at 3,258-85 feet and elevation is 2,993 feet. It is an offset to No. 1 Dyer and in a district about 2 miles south and a little east of the main pool and north of several widely scattered oil and gas wells. Three wells are drilling in this immediate area.

Amerada Pet. Corp.'s No. 1 Dyer, C SW SE Sec. 32-25-37.
T.D. 3,335 ft.; swabbing est. 15 bbls. in 1 hr., 4 per cent water, with 250,000 ft. of gas; 7-in. at 3,272 ft. with 75 sacks.
Byrd-Frost, Inc.'s No. 1-A Wells, SE SE NW Sec. 12-25-36.
S.D. 3,338 ft. for tubing; flowed open 42 bbls. per day; will acidize.
Byrd-Frost, Inc.'s No. 2-A Wells, SW SW SE Sec. 12-25-36.
Location.
E. B. Guess' No. 1-B Justis, SW NW NW Sec. 20-25-37.
S.D. 1,060 ft. in red beds; preparing to resume.
Gypsy Oil Co.'s No. 1-B Arnott, NW SW SW Sec. 32-25-37.
Coring at 3,270 ft. in lime; 1,600 ft. sulphur water in 1 hr. at 3,245-60 ft.
Gypsy Oil Co.'s No. 1 Arnott, C NE NW Sec. 2-25-36.
T.D. 3,495 ft.; preparing to acidize; made 10 bbls. of oil and 1 bbl. of water in 4 hrs. at 3,480 ft. and 40 bbls., 9 per cent water, in 24 hrs.
Gypsy Oil Co.'s No. 2 Arnott, C NW NE Sec. 2-25-36.
Coring at 3,697 ft.; D.S. test at 3,325-3,414 ft. showed 42 bbls., 4¾ per cent b.s. and water in 1 hr.; 1,000,000 ft. of gas and 15 bbls. of oil in 1 hr. at 3,530-3,696 ft.
Gypsy Oil Co.'s No. 3 Arnott, C NW NW Sec. 2-25-36.
T.D. 3,495 ft., lime; running tubing; tested 1 bbl. per hr. through drill stem.
Gypsy Oil Co.'s No. 1-A Vinson Ramsey, C SE SE Sec. 12-26-36.
Drlg. 1,315 ft. in anhydrite and salt.
R. H. Henderson et al's No. 1 Langlie, C SE SE Sec. 8-25-37.
Drlg. at 2,924 ft. with rotary.
R. H. Henderson et al's No. 1 Ogg, C NW NE Sec. 11-25-36.
S.D. 5 ft.
Jeffers Oil Co.'s No. 1 Carlson, C NW SE Sec. 27-25-37.
S.D. 390 ft. in lime.
Tide Water Oil Co.'s No. 1 Coats, SE SE NW Sec. 31-25-37.
T.D. 3,332 ft.; testing; 7-in. at 3,257 ft. with 300 sacks; flowed 102 bbls. through 2½-in. at 3,312 ft. on ¼-in. choke in 13½ hrs.

Hobbs Area

Shell Petroleum Corp.'s No. 3 Sanger, SW NW SW Section 27-18-38, is bottomed at 4,223 feet and found the pay at 4,145-4,223 feet. It flowed 30 bbls. in one hour through the 2½-inch at 4,219 feet. It was treated with 2,000 gallons and flowed 137 bbls. in one hour through the tubing. It was retreated with 6,000 gallons and flowed 142 bbls. an hour and is shut down waiting for test to establish its potential.

Stanolind Oil & Gas Co.'s No. 26 Byers, C SE NE Section 3-19-38, in the southern part of the field, is bottomed at 4,202 feet. It flowed 10 bbls. an hour through the 2½-inch at 4,199 feet. After acidizing with 2,000 gallons, it flowed 55 bbls. in one hour through the tubing. It was retreated with 4,000 gallons and is waiting on acid.

Continental Oil Co.'s No. 4 Grimes, SW NE SE Sec. 28-18-38.
Rig up.
Continental Oil Co.'s No. 13-B-1 State, C SE SW Sec. 13-18-37.
T.D. 4,012 ft.; W.O.C.; 5½-in. on bottom with 200 sacks.
Samedan Oil Co.'s No. 2 Moon, 1,315 ft. S of N line and 2,310 ft. W of E line, Sec. 28-18-38.
Drlg. 1,819 ft. in salt; 12½-in. at 335 ft. with 150 sacks.
Samedan Oil Co.'s No. 1 Byers, 666 ft. from N line and 2,310 ft. from E line, Sec. 3-19-38.
T.D. 3,720 ft. in anhydrite; preparing to cement whipstock at 3,645 ft.
Gypsy Oil Co.'s No. 4 Graham-State, C NW NE Sec. 24-18-37.
T.D. 4,230 ft.; swabbing to test.
National Securities Oil Co.'s No. 1 Linam, NE SE SW Sec. 33-18-37.
T.D. 4,506 ft.; P.B. to 4,238 ft.; S.D.O.
Shell Pet. Corp.'s No. 1 Nora Berry, 1,325 ft W of E line and 1,315 ft. N of S line, Sec. 31-18-38.
Rigging rotary.
Shell Pet. Corp.'s No. 3 Sanger, SW NW SW Sec. 27-18-37.
T.D. 4,223 ft.; completed and waiting for potential test.
Stanolind O. & G. Co.'s No. 26 Byers, C SE NE Sec. 3-19-38.
T.D. 4,202 ft.; flowed 55 bbls. 1 hr. after acidizing; standing; re-treated with 4,000 gals.

Lea Area

Texas Co.'s No. 1 Cole, C NE NE Sec. 35-19-33.
T.D. 3,858 ft.; pulled 7-in.
Anderson & Pritchard's No. 1 Fisher, C SE NE Sec. 8-20-35.
Drlg. 4,237 ft. in lime; 4 bailers of water in 6 hrs. at 4,095-4,105 ft.
Argo Royalty Co.'s No. 2 Burner, C SE SE Sec. 8-20-32.
Rigging up machine.
Jeffers Oil Co.'s No. 1 Jiminez, C SW SE Sec. 12-20-33.
Drlg. 2,075 ft. in salt.
Jeffers Oil Co.'s No. 1 Etz, C NE SW Sec. 12-21-32.
Drlg. 3,390 ft.; top brown lime at 3,210 ft.; elev. 3,813 ft.

CAPROCK AREA

Vierson & Brown's No. 1 Robinson, C NW SE Sec. 14-11s-32.
Standing; rig completed.

Maljamar Area

Maljamar Oil & Gas Co.'s No. 1 Pearl Miller, C NW SW Section 23-17-32, which extends the Maljamar Pool 1 mile to the southeast, was deepened to 4,195 feet and picked up a little sulphur water, 5 bailers per day. It plugged back to 4,190 feet and shut off the water and is testing after acidizing with 2,000 gallons.

BERNALILLO COUNTY

Norins Realty Co., Inc.'s No. 1 Gallegas grant, C NW NW Sec. 19-11n-4e.
Drlg. at 500 ft.

CHAVES COUNTY

Los Chaves Dev. Co.'s No. 1 Government, C NE Sec. 8-8s-23.
Drlg. below 500 ft.
Warman Oil Trust's No. 1 Weldon & Hoard, NW NW SE Sec. 9-14-25.
T.D. 1,660 ft.; recemtg. 5¾-in. at 1,425 ft.

CURRY COUNTY

George Schoonmaker et al's No. 1 Hart, C SE SE Sec. 13-2n-32.
S.D. at 55 ft.

Eddy County

In the Maljamar area, Eddy County, Premier Petroleum Corp.'s No. 1-E Dexter, C NW NE Section 20-17-30, flowed 75 bbls. of oil with 100,000 feet of gas first 24 hours from the pay and total depth at 3,248-96 feet. Elevation is 3,658 feet.

Barnsdall Oil Corp.'s No. 2 Dodd, C NE SE Sec. 22-17-29.
Drlg. 2,793 ft. in lime; 40 bbls. daily at 2,680-90 ft.
R. D. Compton et al's No. 6 Mann, NW SW NE Sec. 4-18-27.
S.D. 840 ft. in red beds.
Coronado Exploration Co.'s No. 1 Anderson, C NE NW Sec. 13-20s-23.
S.D. 1,462 ft.
Dooley & Shanks's No. 1 McClay, C NE SE Sec. 33-18-30.
Drlg. 2,170 ft.; top brown lime at 2,075 ft.; elev. 3,415 ft.
Dooley et al's No. 1 Commerce Trust, NW NE SW Sec. 8-20-27.
Drlg. 680 ft. in lime.
Flynn, Welch & Yates' No. 1 Yates, C SE NE Sec. 6-20-27.
T.D. 1,140 ft. in lime; running 6⅝-in.
Getty Oil Co.'s No. 7 Dooley, SW SW NW Sec. 24-20-29.
Drlg. 5,365 ft. in gray sand and lime.
R. G. Pattillo's No. 1 Thomason, SE SE NE Sec. 12-20-28.
S.D. 405 ft.; 8¼-in. at 386 ft.
Rampo Oil Co.'s No. 1 State, CNL NE SE Sec. 32-17-28.
S.D. 2,232 ft. in lime.
Red Lake Oil Co.'s No. 4 State, NW SW SW Sec. 22-17-28.
T.D. 2,950 ft.; est. at 20 bbls. per day after shot.
Tignor, Etz & Keyes' No. 2 Keyes, C NE SW Sec. 10-17-28.
Rigging up machine.

GUADALUPE COUNTY

Anton Chico Dev. Co., Ltd.'s No. 2 fee, NW NE SW Sec. 20-9n-17.
S.D. 900 ft.

McKINLEY COUNTY

Bennett & Lingfelter's No. 1 Lark Drlg. Co., NE NE NW Sec. 29-20-9w.
S.D. 560 ft. in sand; est. 20 bbls. daily at 469-72 and 554-60 ft.
A. C. Kittel's No. 1, NW NW Sec. 32-20-9w.
Material on ground.
R. W. Sanderson et al's No. 1, NE SW Sec. 21-20-9w.
Material on ground.
David K. Stacey's No. 2 Webber, SW NW Sec. 29-20-9w.
Rig on ground.

OTERO COUNTY

Flynn, Welch & Yates' No. 1 Donahue, C NW NE Sec. 28-24-15.
S.D. 1,585 ft. in lime for repairs; preparing to resume.

QUAY COUNTY

Quay County Dev. Co.'s No. 1, C SE SW Sec. 19-9n-33e.
Drlg. 450 ft.
H. F. Wilcox Oil & Gas Co.'s No. 1 Gurley, SE SW SE Sec. 32-7n-32.
S.D. 500 ft.

Santa Fe County

Elmer Fisher's No. 1 Hill, NE SW Section 6-10n-7e, Barton district, was plugged and abandoned at 2,750 feet in schist. It had several flows of carbon dioxide gas in horizons above 850 feet, a show of gas at 1,340 feet and a show of oil at 1,490-1,510 feet.

Holmberg Interests' No. 1 Cantwell, NW NW NW Sec. 5-10n-9e.
S.D. 810 ft. (cor.)
Kelsey Clients Dev. Est.'s No. 2 State, C NW Sec. 22-10n-10e.
S.D. 1,450 ft.

TORRANCE COUNTY

48 Pet, Co.'s No. 1 Greenfield, C NW SW Sec. 17-9n-8e.
Drlg. 350 ft. shale and shells; 10-in. at 300 ft.

UNION COUNTY

Sierra Grande Oil Corp.'s No. 1 Rogers, C NE SW Sec. 4-29-29.
S.D. 2,280 ft. in sand with show of gas est. at 1,000,000 ft.

VALENCIA COUNTY

Pres-Sel Dev. Co.'s No. 1 Morris, NE SE Sec. 30-12n-10w.
Drlg. 600 ft.
Ringle Dev. Co.'s No. 2 Tome grant, C NE SE Sec. 20-6n-3e.
Rigged and S.D.
Ringle Dev. Co.'s No. 1 Tome grant, C SE SE Sec. 36-6n-3e.
S.D. 400 ft.
Western Natural Resources Corp., Inc.'s No. 2 San Clemente, SE SE NW Sec. 5-6n-1e.
S.D. 6,001 ft.

Rio Arriba County

An important wildcat on the Elvado structure, Rio Arriba County, which made little progress in three years, is preparing to resume. This operation is the Elvada Structures Property Co., Ltd.'s No. 1 Tierra Amarilla grant, approximately in NE Section 26-3s-1e, unsurveyed. The structure was geologized by Dean E. Winchester, of Denver, and a block of 8,000 acres was leased by Pan States Oil Co., Ltd., which started a test on the bank of the Chama River close to the Elvada dam. J. A. Bennett, who had the drilling contract, was killed in 1932 when a horse he was riding threw him from the top of the big dam. George Nye, a Denver attorney who was interested in the company, subsequently died. In 1933 the test finally spudded and made several hundred feet of hole and had some good shows of oil. Last month the new company took over the operation and the block which had been increased to 9,760 acres. The rig, a combination cable and rotary outfit intended to go to the Pennsylvanian, was in the river canon. The water stored behind the reservoir has been steadily rising and now threatens to cover the location. Two weeks ago this location was abandoned and moving the rig up on the ridge was begun and at last reports it was rigging up cable tools. There are two domes on the structure with 500 and 600 feet of closure. The test starts just below the Dakota and will encounter a number of sands within the 6,000-foot projected depth.

ROOSEVELT COUNTY

Claudell Dev. Co.'s No. 1 Wilmes, C SW SE Sec. 21-2s-30.
T.D. 3,667 ft.; resuming; will pull 5-in. and test shows in upper horizons.
K. M. Hancock et al's No. 1, 33 ft. from W line and 1,000 ft. from N line, Sec. 21-1n-37.
Drlg. below 200 ft.

SANDOVAL COUNTY

Continental Oil Co.'s No. 1 L-Bar Cattle Co., 630 ft. N of E quarter cor. Sec. 2-13n-4w.
Moving in from Albuquerque 5 carloads of equipment.

SAN JUAN COUNTY

Aztec Coop. Oil Co.'s No. 1 Aztec, SE SW Sec. 10-30n-11w.
Material on ground.
Continental Oil Co.'s No. 45, NE NW NW Sec. 12-19n-29w.
Rigging.
J. F. Cross et al's No. 1 Wilson, SW CW SE Sec. 17-30-11w.
S.D. 810 ft.
J. F. Cross' No. 6 Duggan, NE NE NE Sec. 20-29-11w.
S.D. 647 ft.
Cross & Poole's No. 1 Aztec, Sec. 1-30-11w.
Making water shutoff at 740 ft.
A. E. Haney's No. 1 Hare, SE SE Sec. 14-29-11w.
Drlg. 680 ft.

Fair Showings of Oil and Light Crude Extend South Turner Valley West

By VICTOR LAURISTON
Staff Correspondent, Canadian Fields

CHATHAM, Ontario, June 22.—In Section 28-18-2w5, South Turner Valley, Renfrew Royalties' No. 1 Morris and Goodfellow, LSD 3, on the west side, got the Home sand between 5,350 feet and 5,360 feet with fair shows of gas and light crude. It is deepening to set 8-inch casing in top of the Madison lime. The Home marker proves structure a considerable distance west. British Dominion Oil & Development Corp.'s No. 4, LSD 6, same section, got the Home sand at 5,240 feet and has entered the brown sand of the Dalhousie formation at 5,570 feet, getting a small gas show. Turner Valley Royalties' No. 1, LSD 13, same section, is resuming from 3,160 feet.

In the south end, Union-Freehold Oil Corp.'s No. 1, LSD 8, Section 21-18-2w5, has a fishing job in top of the lime at 5,610 feet. Publix Oil & Gas Co.'s No. 1, LSD 8, Section 28-18-2w5, has cleaned out after a shot of 820 quarts in the lower lime. It increased the flow very little, and a second shot will be tried higher. In the North Turner Valley Field, Model Oils' No. 3, LSD 1, Section 22-20-3w5, is cementing 18-inch casing at 503 feet and changing to rotary rig.

Shareholders of Spooner Oils, Ltd., of Calgary have approved sale of the company's limestone rights in the North Central Turner Valley area to Royalite Oil Co. for 8,300 shares of Royalite stock. The deal covers acreage in Section 13-20-3w5, on which three tests had been drilled, two being small naphtha producers from the Madison lime.

Tests in Foothills

On the Moose Dome, northwest of Turner Valley, Moose Oils' No. 2 has cellar dug in LSD 16, Section 29-22-6w5. Moose Oils' No. 1, same LSD, standing at 2,835 feet, has been cleaned out, except for the lost tools. It is bailing considerable 48.5 gravity crude and has some gas which will be used for drilling No. 2. Production comes from the Devonian limestone. This is the only Devonian production developed in Alberta.

On the Watson structure, north and west of Lundbreck, Mar Jon Oil Co.'s No. 3, LSD 3, Section 4-10-2w5, is below 1,695 feet after getting an additional gas show at 1,572 feet. A California syndicate will start a new test on acreage subleased from the Mar Jon company.

Saskatchewan Drilling

In the Lloydminster Field, western Saskatchewan, Colony Oil & Gas Co.'s No. 1, Section 25-49-27w3, is below 1,075 feet after getting a second show of gas.

South of Regina, Amalgamated Gas & Oil Co. of Winnipeg, is locating a second test on the Blackfoot structure, where Blackfoot Oil & Gas Development Co.'s No. 1, Township 13-20w2, has been standing at 1,750 feet. Dr. D. F. McDonald, consulting geologist, is making the location.

Drilling in Ontario

In the Dover Field, Kent County, Ontario, Central Pipe Line Co. of Chatham is moving equipment on the Joseph Sterling farm, NE Lot 1, Front Concession, Dover East Township, west of Prairie Oil & Gas Co. producers and southeast of Central Pipe Line Co.'s No. 1 Sterling, a good producer.

In Lambton County, Dave Wright of Sarnia is reported preparing for a deep test for F. H. Merritt of Duluth, to be drilled in the Enniskillen Field near Petrolia.

Kutz Canon O. & G. Co.'s No. 1 Day, SW SW SW Sec. 20-28-10.
Drlg. 4,370 ft. in sandy shale and shells and showing some increase in oil and gas. Preparing to unload 4,000 ft. of water and test.
R. C. Oswell's No. 4 Government, SW NW NE Sec. 34-30-11w.
S.D. 1,790 ft.
R. C. Oswell's No. 6 Government, SE NE Sec. 33-30-11w.
Spudded and S.D.
Reserve Oil Co.'s No. 6 Shaffer, SE NE SE Sec. 36-22n-14w.
Location.
San Juan Pet. Co.'s No. 1 Lemley, NE SE SE Sec. 32-30-11w.
S.D. 1,314 ft.
Nick Spatter's No. 1 fee, C NE SW Sec. 32-31-11w.
S.D. 1,480 ft. for pipe.

H. C. Stratton's No. 1 Hart, SW NE SE Sec. 25-30-12w.
Abd. at 1,630 ft.

SAN MIGUEL COUNTY

Cabra Springs O. & G. Co.'s No. 1 Thompson, SW NE NE Sec. 22-12n-22e.
U.R. 6⅝-in. to bottom at 3,920 ft. for water shutoff.
Cabra Springs O. & G. Co.'s No. 2 West Pino Mesa, SW SW SW Sec. 31-12-22.
S.D. 312 ft.
Pioneer Oil Co.'s No. 2 Montezuma, CSL SE SW Sec. 14-15n-16.
Drlg. 300 ft.
Starr-Kennedy Oil Co.'s No. 3 Adams, NE NE SE Sec. 25-17-16.
Stdg. at 5,090 ft. after completing rig to resume following fire.

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COLORADO

ADAMS COUNTY

Riddle Pet. Co.'s No. 1 Baxter, C SW Sec. 2-3s-66w.
Standing partially rigged and drlg. wtr. well.

Archuleta County

Another test in the Price district, Archuleta County, scheduled to begin at once in William E. Hughes estate's No. 1 fee, on unsurveyed land approximately in the SW Section 24-33n-2e, on the west side of the Navajo River. Contract was let to Russell-Wham Development Co., of Madill, Okla., and it is rigging up approximately three-fourths of a mile north of Oil City Petroleum Co.'s No. 1-A Garnett, a drilling well which has had some good shows of oil and gas and is drilling close to the top of the Dakota formation. The Hughes ranch consists of around 65,000 acres in the Tierra Amarillo land grant.

William E. Hughes Est.'s No. 1 fee, SW Sec. 24-33n-2e (unsurveyed).
Rigging.
Oil City Pet. Co.'s No. 1-A Garnett, NW NE SW Sec. 25-33n-2e.
Shows of oil and gas at 970-1,100 ft. cased off with 6¼-in. at 1,106 ft.; drlg. at 1,132 ft. in black shale.
Navajo Oil Co.'s No. 1 Crowley, SW SW NE Sec. 11-32n-1e.
Resumed at 537 ft. 5⅝-in. set at 537 ft.

BACA COUNTY

J. H. Everett et al's No. 1, 330 ft. NW cor. Sec. 24-32-48.
Spudded and S.D. to complete rigging.

BOULDER COUNTY

Leslie R. Steele et al's No. 1 Maxwell, SW NE NW Sec. 24-1n-71.
Drlg. 1,090 ft.

FREMONT COUNTY

Waterville Oil Co.'s No. 1 State, SE SE NW Sec. 16-18s-69w.
T.D. 2,780 ft., 150 ft. of oil in the hole. Underreaming 5-3/16-in. at 2,601 ft.

GRAND COUNTY

Colorado Oil Ref. Co.'s No. 1 Linke, NE SW SW Sec. 13-1n-77w.
Drlg. below 1,900 ft.
Interstate O. & R. Co.'s No. 1 Hinman, NE SE NW Sec. 11-2n-81.
Resuming at 1,997 ft.; will C.O., cement off caves and drill deeper.

HUERFANO COUNTY

S. W. Pressey's No. 1 Ojo, SW NE Sec. 10-29-65.
S.D. 2,550 ft.

JACKSON COUNTY

Colorado Oil Ref. Co.'s No. 1 North Park Coal, NW NW Sec. 18-9n-78.
T.D. 1,805 ft.; U.R. 15½-in. to set at 500 ft.
Continental Oil Co.'s No. 3 Hoye, NW NW NE Sec. 34-9n-78.
Drlg. 2,544 ft. in shale and shells.

JEFFERSON COUNTY

Ruby Hill O. & G. Co.'s No. 1 Braden, SE cor. Sec. 24-4s-69.
S.D. 4,280 ft.

LAS ANIMAS COUNTY

Mountain States Oil Corp.'s No. 1 Nickols, C NE SE Sec. 10-34-62.
S.D. 1,640 ft.

LINCOLN COUNTY

Consolidated Smelting & Metals Co.'s No. 1 Hancock, NE NE SW Sec. 7-17s-52.
T.D. 1,190 ft.; C.O.

Moffat County

Stanolind Oil & Gas Co. completed another good producer on the Iles Dome in No. 16-8D Shaw, SE NW NW Section 27-4n-92, in the Sundance sand at 3,354-93 feet. It flowed 62 bbls. per hour beaned down or at the rate of 1,488 bbls. daily. Elevation is 6,421 feet. Top of the Dakota was at 2,748 feet and top of the Morrison at 3,147 feet. The Iles Pool is now running around 2,500 bbls. daily, probably one-half to one-fourth of the capacity of the wells. The systematic development of the pool for the past year is generally believed to be preliminary to construction of a pipe line to Wamsutter, on the Union Pacific Railroad in Wyoming, for rail shipment to the Utah Oil Refining Co.'s plant at Salt Lake City.

Stanolind O. & G. Co.'s No. 5-S Parkinson, NW cor. SE Sec. 22-4n-92.
Moving in rotary equipment.
Texas Co.'s No. 2 Iles Investment, 620 ft. S of N line and 220 ft. E of W line, Lot 4, Sec. 23-4n-92.
Spudding at 103 ft.
Mountain Fuel Supply Co.'s No. 1 Murdock, SE SE NE Sec. 24-12n-101.
Some materials on location.

MONTEZUMA COUNTY

McElmo Oil Co.'s No. 1 West, NE NW NE Sec. 31-36n-17w.
S.D. 3,131 ft. with 1,200 ft. oil in hole.

MORGAN COUNTY

Swisher et al's No. 1 Lunt, 92 ft. W of E line and 360 ft. N of S line, Sec. 2-4n-60.
Drlg. shale 350 ft.

PARK COUNTY

South Park Oil Co.'s No. 1 State, SE SE SW Sec. 16-11s-75.
T.D. 1,415 ft.; fighting cave and trying to land 10-in. on bottom.

PROWERS COUNTY

Trojan O. & G. Co.'s No. 1 Lotus Oil, NW NE NE Sec. 15-23-46.
T.D. 5,227 ft.; drilled out plug to bottom after cmtng. off caves.

WYOMING

Albany County

Ohio Oil Co. is rigging rotary for a deep test to the Pennsylvanian formation on the Two Rivers structure in Albany in No. 1 Two Rivers Land & Cattle Co., C SW NE Section 8-17-74. Rotary from the abandoned Diamond Dome test will be used. The company drilled a test on this structure a number of years ago in Section 23-18-74, abandoned at 2,107 feet after encountering water in the Dakota. Its success in recent months in finding production in the Sundance (below the Dakotas) and revisions in geology on the basis of seismograph surveys is considered responsible for drilling this wildcat. The structure is 12 miles east of the Quealy Dome where the California Co. brought in a discovery a few months ago.

BIG HORN COUNTY

J. W. Bales' No. 1 Parker, C SW SW Sec. 23-49-89.
S.D. 125 ft.
Peter Evanoff's No. 1 Griffin, Lot 60, Sec. 4-55-97.
S.D. 1,594 ft.
Peter Evanoff's No. 2 Griffin, Lot 53, Sec. 28-55-97.
Rig.
Peter Evanoff et al's No. 1 McAllister, Lot 40, Sec. 2-55-97.
Suspended location.
Ohio Oil Co.'s No. 2 Sidon Canal, C SW SW Sec. 24-56-97.
Drlg. 4,381 ft. in shale.
Ohio Oil Co.'s No. 3 Byron Union, SE NW NE Sec. 22-56-97.
Drlg. 1,934 ft.
Ohio Oil Co.'s No. 4 Byron Union, SW NE Sec. 22-56-97.
Rig up.
J. H. Shaffer's No. 1 Keachie, C SW SW Sec. 7-49-91.
Spudding.
Taylor Oil Co.'s No. 1 Hoskins, Lot 5 (SE SE), Sec. 25-56-97.
T.D. 5,275 ft.; lost 200 ft. of drill pipe while drlg. by old drill pipe at 4,950 ft.
S.D. account of high water.
Wyoming Oil & Ref. Co.'s No. 1 Evans, NE NE NW Sec. 12-49-91.
Drlg. 400 ft.

Carbon County

General Petroleum Corp. of California has taken over Earl W. Reeder, Inc.'s operations on the Overland Dome and is checking No. 1 Whitford, SW SE SE Section 24-20-84, to determine whether to attempt to clear the hole and carry it deeper or start from the top in a new hole. This well, drilled with rotary, is bottomed at 4,383 feet where it has two bailers in the hole. Its No. 1 Union Pacific has been standing for some time with the hole in bad shape. This well had several good oil and gas shows probably commercial.

Ohio Oil Co.'s No. 4 Diamond Cattle, SE SW NW Sec. 35-20-78.
Rigging up.
Earl W. Reeder, Inc.'s No. 1 Whitford, SW SE SE Sec. 24-20-84.
S.D. 4,383 ft. (cor.)
Earl W. Reeder, Inc.'s No. 1 Union Pacific, C SW SW Sec. 19-20-83.
S.D. 5,931 ft.; may be deepened.

Converse County

An important test is to be drilled in the Big Muddy Field east of Casper by Continental Oil Co. in No. 60 State, NW SW NE Section 9-33n-76, building derrick with intention of penetrating the Sundance, Embar and Tensleep horizons. This field has produced more than 24,000,000 bbls. since its discovery in 1915, mostly from the Wall Creek series. Several wells have been drilled to the Dakota and Lakota sands where some production was found, but the Sundance, in recent months a prolific producer in the Medicine Bow Field, Carbon County, and the Lance Creek Field, Niobrara County, has never been drilled. The prospects for Wyoming fields have been greatly enhanced by the recent discoveries and the state is again receiving some of its old-time attention.

Chadron-Osage Oil Co.'s No. 1 State, SW cor. Sec. 16-32-69.
Drlg. 460 ft.
Continental Oil Co.'s No. 60 State, NW SW NE Sec. 9-33-76.
Bldg. derrick.
Continental Oil Co.'s No. 9 Whiteside, 2,688 ft. S of N line and 1,072 ft. W of E line, Sec. 7-33-76.
Drlg. at 845 ft.; 13⅜-in. at 235 ft.

Otto Olston et al's No. 1 Carey, Sec. 6-32-74.
S.D. 642 ft.
John Ackard's No. 1 Daniels, SW SW SE Sec. 17-32-71.
T.D. 2,600 ft.; fshg.

FREMONT COUNTY

Mid-American Oil Co.'s No. 3 Government, NW NE SW Sec. 14-28-92.
Drlg. 150 ft.
Monongahela Oil Co.'s No. 1 Wisda, NE SE SE Sec. 13-28-93.
Drlg. 3,180 ft. in lower Frontier.
Tropic Oil Co.'s No. 1 Government, C SE SW Sec. 34-27-90.
Drlg. 2,701 ft.

HOT SPRINGS COUNTY

Argo Oil Co.'s No. 16 Ellen, NE SE NW Sec. 14-44-98.
Set 10-in. at 1,425 ft., W.O.C.
California Exploration Co.'s No. 2 Government, NW SW NW Sec. 7-44-96.
Set 12½-in. at 697 ft., W.O.C.
Fern Oil Co.'s No. 1 Government, CSL SW SW Sec. 11-44-98.
Moving in materials.
Oscar G. Grace's No. 1 Government, SW NW NW Sec. 21-43-92.
Rigging up machine.

LINCOLN COUNTY

Senrab Oil Co.'s No. 3 Government, N SE NW Sec. 10-26-113.
S.D. 1,011 ft.
Superior-Wyoming Oil Co.'s No. 2-B, Lot 3. (NE NW) Sec. 3-26n-113w.
Rig.

Niobrara County

Argo Oil Co.'s No. 3 Elliott, C NE NE Section 6-35-65, latest Sundance producer in the Lance Creek Field, is drilling out plug after cementing 7-inch on top of the third Sundance at 3,746 feet and will be a completion in a few days. On a drill stem test it showed for 100 bbls. an hour of 47.5 gravity crude at 3,746-3,804 feet with 4,000,000 feet of gas and a rock pressure of 525 pounds.

Ohio Oil Co. made another location east of two producers it completed recently, No. 4 Carrie Putnam, C SW SW Section 33-36-65, and is building rig.

Argo Oil Co.'s No. 3 Elliott, C NE NE Sec. 6-35-65.
T.D. 3,810 ft.; drlg. plug, 7-in. at 3,746 ft.
Black Hills Ref. Co.'s No. 1 Wright, SE SE SW Sec. 22-36-64.
Moving in rotary equipment.
Continental Oil Co.'s No. 2 Schuricht, C SE NE Sec. 6-35-65.
Drlg. 1,969 ft.
Interstate Oil & Ref. Co.'s No. 1 Morrell, NW NE SE Sec. 9-39-61.
S.D. 3,030 ft.
Fall River Royalty & Producers Co.'s No. 3-L, CEL NE NE Sec. 2-39-61.
Drlg. 382 ft.
Ohio Oil Co.'s No. 2 Lamb, NE NW NE Sec. 5-35-65.
Drlg. 3,000 ft.; 6¼-in. at 2,995 ft.
Ohio Oil Co.'s No. 4 Putnam, C SW SW Sec. 33-36-65.
Bldg. rig.
S. & H. Dev. Co.'s No. 1-A Olinger, SE NE NW Sec. 1-36-63.
T.D. 1,460 ft., underreaming 5-in. at 1,416 ft.

PARK COUNTY

George T. Beck's No. 1 fee, NW SE NW Sec. 27-53-101.
Resuming at 1,181 ft.
Continental Oil Co.'s No. 3 Northern Pacific, NW SE SE Sec. 23-58-98.
Drlg. 1,561 ft. in shale and bentonite.
Garland Oil Co.'s No. 2 Government, SE NE NW Sec. 14-56-98.
S.D. 2,166 ft.
V. M. Kirk's No. 1 Connaghan, C NW SW Sec. 10-50-100.
Location.
Resolute Oil Co.'s No. 1 State, C NW SW Sec. 16-57-101.
S.D. 3,608 ft.
Texas Co.'s No. 3 Ora Sonners, 660 ft. N of S line and 590 ft. W of E line, NE NW Sec. 39-51-100.
Completed at 3,501 ft.; not tested; rigging up pump. equip.

SHERIDAN COUNTY

Beaver Creek Oil Syndicate's No. 1 Allison, SW SE Sec. 15-55-85.
S.D. 2,660 ft.
Texas Co.'s No. 7-J, SW SW SE Sec. 34-27-113.
Location.

SUBLET COUNTY

Piney-La Barge Oil Co.'s No. 2 Government, CEL NE NW Sec. 18-28-113.
Drlg. below 520 ft.
Texas Co.'s No. 7-J, SW SW SE Sec. 34-27-113.
Rigging.

SWEETWATER COUNTY

Vermillion Oil Co.'s No. 1 State, SW cor. Sec. 16-12n-99.
S.D. 4,685 ft.
Wyoming-California Pet. Co.'s No. 1 Government, SE cor. Sec. 20-16-104.
Set surface pipe at 192 ft., W.O.C.

WASHAKIE COUNTY

C. L. Brome et al's No. 3 Government, SW NW NW Sec. 31-48-90.
Drlg. 1,300 ft.
Chris Oil Syndicate's No. 1 Government, C SW SW Sec. 31-48-90.
T.D. 1,830 ft.; fshg. for tools.
Wyoming Oil & Ref. Co.'s No. 1 Frison, NW SW NW Sec. 14-48-91.
T.D. 1,700 ft.; underrmg. 8¼ in. from 1,420 ft. to bottom.

Weston County

Osage Trust Co.'s No. 15-A, NW cor. SE Section 14-46-64, in the Osage Field, completed last month for 40 bbls. on the pump at 2,010 feet, sprang a surprise when it cleaned out by an increase to 135 bbls. daily on the pump.

Conway Oil Corp.'s No. 1 Government, C SE NW Sec. 7-41-60.
Drlg. 1,281 ft.
Carl Cundy's No. 9 Government, NW cor. NE Sec. 31-46-63.
Cmtd. 8¼-in. at 420 ft., W.O.C.
Des Moines-Osage Syndicate's No. 1 Thierry, NW NW SW Sec. 32-46-63.
Cmtd. 8¼-in. at 500 ft., W.O.C.
Beaver Creek Oil Synd.'s No. 1 State, C NE NE Sec. 23-44-63.
Drlg. 150 ft.
Federal Oil Co.'s No. 6, C SE SE Sec. 15-46-64.
Rigging.
C. R. Herbison & Son's No. 3 Draper, NW NW Sec. 22-46-63.
Drlg. 50 ft.
La. Lleihe Oil Co.'s No. 18 fee, C SW SW Sec. 17-46-63.
Drlg. below 200 ft. (cor.)
Updike Brothers' No. 5, CEL NE SW Sec. 25-46-64.
Drlg. 400 ft.

BIG HORN COUNTY

Enterprise Oil Co. et al's No. 2 Lynde, SW SW SE Sec. 21-6s-35e.
T.D. 3,590 ft.; cleaning out 50 ft. off bottom.

CARBON COUNTY

Bailey Round Butte Oil Co.'s No. 1, 1,120 ft. W of E line and 2,140 ft. N of S line, Sec. 3-6s-23.
Drlg. 815 ft.
Ohio Oil Co.'s No. 15 Montana Industrial, C NE NE Sec. 11-7s-21.
Drlg. 3,859 ft. in shale.

CASCADE COUNTY

C. Leonard Smith's No. 1, NE NE SW Sec. 14-22n-2e.
Fort Worth spudder on location.

CHOTEAU COUNTY

Mills & Decker's No. 1, NE NW Sec. 29-27n-13e.
Spudding.

FERGUS COUNTY

Button Butte O. & G. Co.'s No. 1 Woodward, SE SE SW Sec. 20-14n-24.
Drlg. 3,095 ft.
Emmons et al's No. 1, 220 ft. W of E line and 2,140 ft. N of S line, Sec. 6-20-18.
Drlg. 536 ft.
S. W. Pennock et al's No. 1 Nordheim, NW NE NE Sec. 6-21n-18e.
S.D. 480 ft. (cor.)

GALLATIN COUNTY

Montana Gas & Pet. Corp.'s No. 1 Adams. SE SE SE Sec. 36-2n-1e.
Drlg. 1,421 ft.
Ben W. Ryan's No. 1 Tice, NE NE NE Sec. 28-1n-2e.
Drlg. 1,856 ft.

Glacier County

Cut Bank reported eight completions and six locations. Gardner-Smith's No. 1 Tweedy, Lot 1, (NE NE) Section 36-33-6w, 4 miles south of the town of Cut Bank and 2 miles southwest of the nearest producer, was completed at 2,856 feet and swabbed 225 bbls. in eight hours from the pay at 2,842-52 feet. The limits of the pool remain to be determined.

L. R. Hannah's No. 1 State, Lot 5, Block 4, Section 12-33-6w, in the town of Cut Bank, is estimated good for 10 to 15 bbls. settled from the pay at 2,940-56 feet. Montana Power Gas Co.'s No. 1 Heiland unit, NW SE NW Section 27-36-5w, in the gas area, which failed to encounter the gas pay, but showed for a small oil well at 2,820-35 feet, is estimated at 10 to 12 bbls. daily on the pump. Nadeau Brothers' No. 4 Van De Mar, C SW NE Section 35-35-6w, swabbed 210 bbls. the first 24 hours at 2,865 feet from the pay at 2,840-62 feet.

Steele Creek Producers, Inc.'s No. 2 Carman, C SW NW Section 19-34-5w, swabbed 66 bbls. first 24 hours and pumped 35 bbls. first 24 hours from the pay at 2,777-2,803 feet. This is a south offset to R. C. Tarrant's No. 1 Carman, a dry hole in the center of the field. Santa Rita Oil & Gas Co.'s No. 2 Ritchie, C NE NE Section 6-33-5w, was dry and abandoned at 2,800 feet. Oil rose only 200 feet from sand at 2,770-85 feet. R. C. Jeffries' No. 2 Lukens, NE cor. Section 12-33-6w, is estimated at 30 bbls. from the pay at 2,950-63 feet. Consolidated Gas Co.'s No. 6 Tribal, C SW SW Section 10-34-6w, swabbed 92 bbls. first 18 hours from the pay at 2,934-45 feet.

Anderson's No. 1 Anderson, NW SE NW Sec. 26-35-6w.
Rigging.
Askins' No. 1 Askins, Lot 24, Blk. 33, Sec. 12-33-6w.
S.D. 2,700 ft. Will start sidetracking at 2,021 ft.
C. P. Castle's No. 2 State, 600 ft. N of S line and 1,320 ft. E of W line, Sec. 36-35-6w.
Rig.

(Continued on Page 86)

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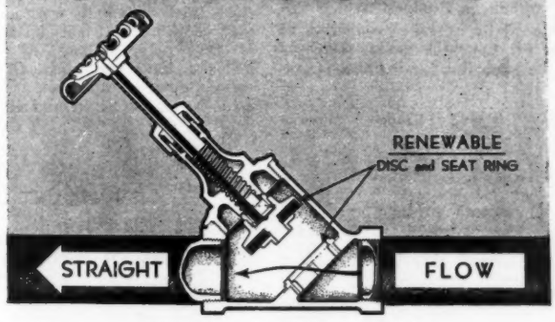

Jenkins Fig. 124 Standard Bronze Y Valve

OILS and other viscous fluids, will flow through a Jenkins Y Valve with minimum loss of head. The design of this valve provides for a straight-through passage practically in line with the pipe. There are no sharp bends to cause high fluid friction.

A Jenkins Y Valve also offers a decided advantage where valves must be located in cramped places. The spindle at a 45 degree angle makes the hand wheel easily accessible, even where the valve is installed very close to tanks, holders, walls, etc.

Fitted with a Jenkins Renewable Seat Ring, this valve is easier to keep tight and requires practically no attention. Regrinding is never necessary. The sectional view shown above is a Fig. 124 Jenkins Standard Bronze Y or Blow-Off Valve. Other patterns include Extra Heavy Bronze, Special Hard Bronze, and Standard and Extra Heavy Iron Body with Bronze mounting, screwed or flanged. Stocks are carried by good supply houses everywhere. For further details, write for Bulletin 104, or consult the new Jenkins Catalog.

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Jenkins Valves

BRONZE—IRON—STEEL SINCE 1864

Big Potentials of New Wells in Edmond Pool in Oklahoma County; All Eyes on Britton Area

By JAMES McINTYRE

The Britton discovery well, Slick-Urschel, Inc. and others' No. 1 Owens, SE SE SE Section 19-13-3w, a half mile northwest of the city limits of Britton, Oklahoma County, Oklahoma, will be completed temporarily as a gas well to provide fuel for other wells that are expected to be drilling soon in that area. The well is at a total depth of 6,789 feet, in Wilcox sand, and it will be allowed 100 bbls. a day production after it has taken its 15,000 bbls. of initial allowable. In a test of 16 hours on Saturday the well averaged 18 bbls. of 46 gravity oil per hour. It showed it was good for 35,000,000 feet of gas per day. The gas was cutting the oil 5 per cent with fresh water and drilling mud but there was no salt water. The Britton city council has refused high prices for leases on city owned property and made it known that the city's drilling ordinance would be enforced. Some operators who have leased town lots for oil and gas purposes are making plans to oppose the State Conservation Department's plans to create 10-acre drilling units in the town. Jones and others have been granted a permit to drill on Lot 9, Block 10, in NW NE SE Section 29-13-3w. Slick-Urschel and others' No. 1 Zielny in NE NE SW Section 29-13-3w, will soon start drilling as tools have been moved in.

Oklahoma Production

Estimated daily average production of Oklahoma for the week ending June 22 and for the preceding week follows:

	Barrels	
	June 22	June 15
Allen	7,975	8,150
Asher-West Asher	1,300	1,300
Burbank	8,600	8,600
South Burbank	11,250	11,250
Balance Osage	27,250	27,250
Blackwell	4,850	4,825
Bristow-Slick	9,075	9,100
Chandler	5,950	5,900
Crescent	8,300	6,050
Cromwell	4,350	4,350
Cushing-Shamrock	13,250	13,300
Duncan district	4,150	4,150
Edmond	4,800	3,425
Fish	9,350	8,425
Fitts	18,450	16,775
Gray	2,100	2,100
Graham	4,000	3,975
Healdton	9,425	9,425
Hewitt	4,800	4,800
Holdenville	1,550	1,575
Keokuk	2,100	2,500
Konawa	1,850	1,775
Lucien	11,900	10,900
Marshall-Lovell	1,050	1,050
Oklahoma City	149,125	168,726
Papoose	1,325	1,325
Polo	2,625	3,600
Sasakwa and townsite	2,700	2,825
Sholem Alechem	4,050	4,050
Seminole Field:		
Bowlegs	12,500	11,625
Carr City	6,225	6,425
Earlsboro	9,925	10,225
East Earlsboro	10,000	9,675
South Earlsboro	1,175	1,375
Little River	15,125	15,060
East Little River	825	800
Maud	950	1,250
Mission	3,150	2,250
Seminole	10,900	10,850
East Seminole	1,475	1,500
Searight	3,700	4,320
Total Seminole	75,950	76,455
St. Louis-Pearson	27,275	27,975
Tatums	4,975	5,000
Tonkawa-Garber-Thomas	5,975	5,975
Wewoka	3,525	3,525
Yale-Jennings	5,100	5,100
Other pools	57,625	57,619
Total Oklahoma	517,025	532,225

The Koetsch Field

The Sinclair Prairie Oil Co. and others' No. 1 Koetsch, SW SW SW Section 23-15-3, in Logan County, has been plugged back to Viola lime. Whipstock will be set and the hole will be drilled to the first Wilcox sand which was previously passed up. It had 150-bbl. initial production in the second Wilcox at 6,322-33 feet but drilled into water at 6,341 feet.

Lucien Pool Extended

The Twin State Oil Co. extended the Lucien Pool in Noble County a half mile south and west with its No. 1 Pfeiffer, C N half NE SW Section 33-20-2w. Wilcox sand at 4,907-51 feet yielded 475 bbls. of oil in the first 24 hours.

An 8-Mile Loop

Stanolind Pipe Line Co. will build an 8-mile loop, from Payson Station to Tribbey, on its 8-inch main line. Reclaimed pipe from the Oklahoma City district will be used. This 8-mile stretch was the only one on the line not looped. The same company will soon be actively engaged in laying its second line out of the Fitts Pool.

Continental Oil Co.'s No. 2 Young in Section 13-14-3w, in the Edmond Pool, was given a potential production of 14,916 bbls.; Marathon Oil Co.'s No. 4 Dahl in Section 31-14-3w, a potential of 12,300 bbls., and Mid-Continent Petroleum Corp.'s No. 4 Young in Section 31-14-3w, a potential of 14,421 bbls.

Fitts Pool

At the close of the week's review of Fitts Field operations there were 102 locations, rigs up and wells drilling in the field. Fifty-two wells were actively drilling; there were 10 rigs up and 40 other locations made on most of which cellar and pits have been dug. Of the 20 locations reported last week as having been made by E. H. Moore and his associates, nearly all have had cellar and slush pits dug. Mr. Moore, who is in charge of operations, did not delay a day when the locations were spotted, but put crews of men to work getting the locations ready for the rigs.

In the past week only two completions were reported in the Fitts Pool:

Magnolia Petroleum Co.'s No. 2 Simpson, a twin, SW SE NE Section 29-2-7, Bromide at 3,988 feet, sands at 4,085 feet and 4,159 feet, total depth 4,175 feet, flowed 2,495 bbls. in 24 hours through casing.

J. E. Crosbie and others' No. 2 A. J. Harden, SE NE NE Section 30-2-7, Bromide at 4,095 feet, sands at 4,185 feet and 4,270 feet, total depth 4,283 feet, flowed 55 bbls. in 14 minutes through tubing, 632 bbls. in one hour through casing, and 155 bbls. the next 15 minutes through casing.

First reports of new work in the Fitts Pool include Bishop Oil Co.'s No. 1 Schaffer, SE NE NW Section 25-2-6, a location; Moore and others' No. 5-A Craddock, 1,065 feet from west and 405 feet from north lines of SW quarter Section 29-2-7, building rig; Moore and others' No. 7 Craddock, NE SW SW Section 29-2-7, deepening from 4,121 feet with hydril; Magnolia Petroleum Co.'s No. 3 Simpson, SE SE NE Section 29-2-7, moving in rotary; same company's No. 4 Simpson, NW SE NE Section 29, cellar and pits.

In northern Pontotoc County, Southern Oil Co.'s No. 1 Perry, SW SW NW Section 11-4-6, had rig on the ground.

Carter Oil Co.'s No. 1 Lucy Brown, NW SE SE Section 25-2-6, an old well, was plugged back from 4,300 feet to 4,280 feet. It was cleaned out and shut in for 12 hours and then flowed 92 bbls. the first hour and 65 bbls. in the next two hours, all through tubing.

Manahan and others' No. 2-A Reynolds-Wagner, 865 feet from north and 430 feet from east lines of SE quarter Section 18-2-7, was shot with 10 quarts at 1,742-53 feet, and swabbed 128 bbls. in 24 hours. The crew was cleaning out.

Amerada Petroleum Corp.'s No. 1 George Smith, SE SW NW Section 28-2-7, the most easterly well in the field, which had Bromide sands at 4,035 feet and 4,117 feet, and McLish at 4,140-54 feet, total depth, ran 2-inch tubing to 4,070 feet and installed gas lift. The well flowed 8 bbls. of oil per hour.

Greater Seminole Field

Completions in the Greater Seminole Field included the following wells:

Sonora Oil Co.'s No. 3 Gilmore, 760 feet west and 1,250 feet south of NE cor. Section 22-5-8, Seminole County, sand at 831-42 feet, shot with 4 quarts, 10-bbl. pumper.

Westgate Oil Co.'s No. 4 Schrader, 990 feet from north and 1,054 feet from west lines of NW quarter Section 6-6-5, Pottawatomie County, Simpson Dolomite at 4,005-79 feet, pumped 93 bbls. in 48 hours. Wilcox sand at 4,192-4,209 feet showed little oil and some water.

Reeves and others' No. 2 Brandenburg, NE SW SW Section 3-7-4, South St. Louis Pool, Pottawatomie County, was abandoned at 3,563 feet. It swabbed 100 bbls. of oil and water after a 40-quart shot.

Smith & Scott's No. 1 Brandenburg, SE NW NE Section 3-7-4, had Simpson Dolomite at 4,102 feet with pay at 4,135-40 feet. It swabbed 1,048 bbls. in 48 hours after having swabbed 615 bbls. in 24 hours.

Sinclair Prairie Oil Co.'s No. 2 M-Qua-Ka, NE NW SW Section 11-7-4, swabbed 27 bbls. net oil in 24 hours after an acid treatment in Dolomite at 4,257-92 feet.

Jones & Shelburne's No. 1 Whitney, SE NE NW Section 31-7-8, in the Fish Pool, Seminole County, was dry and abandoned at 3,773 feet.

Barnsdall Oil Co.'s No. 1-A Robertson, NW NE SE Section 30-8-4, Pottawatomie County, had Hunton lime at 4,412-20 feet and acidized it. The well flowed 387 bbls. in 48 hours.

Shell Petroleum Corp.'s No. 1 Harbor, SE SW SE Section 22-9-6, Seminole County, plugged back from 4,207 feet to Misener sand at 4,002-20 feet. It was acidized and then shot with 12 quarts but made only a 12-bbl. pumper, initially.

Amerada Petroleum Corp.'s No. 10 Chase, SE NE SE Section 29-9-6, swabbed 1,886 bbls. in 48 hours from Wilcox sand at 4,098-4,124 feet which was given two light shots.

Campbell and others' No. 2 fee, NE SW NE Section 17-9-7, East Seminole Pool, Seminole County, had Gilcrease sand at 3,334-74 feet and flowed 60 bbls. of oil and 500,000 feet of gas the first 24 hours.

Deep Rock Oil Co.'s No. 2 Hagler, SE SE NE Section 19-9-7, had Hunton lime at 4,080-4,123 feet, with pay in the last 6 feet. It was acidized and produced 604 bbls. the first 24 hours.

Springrose Oil Co. was rigging up to deepen No. 1-A Brandenburg, SE NE NE Section 3-7-4, and made a location for No. 2 Brandenburg, SW NE NE Section 3-7-4.

C. E. Reynolds' No. 1-A Harris, 1,065

Wildcat Operations in Oklahoma

Week Ending June 22

NORTHERN OKLAHOMA

BECKHAM COUNTY

E. L. Martin et al's No. 1 Robberson, C NE SE Sec. 1-9-22w.
Spudded and S.D.

BLAINE COUNTY

Earl Ingrahm et al's No. 1 Masters, SW NW NW Sec. 27-16-11w.
S.D. 1,240 ft.

CADDO COUNTY

Denver Prod. & Ref. Co.'s No. 1 Sah-Can, C SE SE Sec. 33-10-10w.
Drlg. 6,900 ft.

H. W. Lee et al's No. 1 Horton, NE NE NE Sec. 9-6-13w.
Rigged up; S.D.

H. W. Lee et al's No. 1 Stacey Ferrell, SW NE NE Sec. 2-6-13w; (2,000-ft. test).
T.D. 2,280 ft.; S.D.

F. A. Turner et al's No. 1 Spain, NE NE SW Sec. 1-5-11w.
Rigging up rotary.

CANADIAN COUNTY

R. Carl Larkin's No. 1 Brobine, NW NW NE Sec. 23-13-5w.
Drlg. 7,223 ft.

CLEVELAND COUNTY

Asa Lee Mayes, Inc.'s No. 1 Faut, SW SW NE Sec. 27-10-2w.
Cellar and pits.

Sinclair Prairie et al's No. 1 Franklin, SE NW SE Sec. 21-10-2w.
Top second Wilcox 7,269 ft.; 75,000,000 ft. wet gas; 1.34 gals. gasoline per 1,000 cu. ft. of gas; gasoline .832 gravity.

COAL COUNTY

Amerada Pet. Corp. and Stanolind Oil & Gas Co.'s No. 1 Travelers' Life, SW NW SE Sec. 28-1s-9e.
T.D. 260 ft.; waiting for cmt.

Carter Oil Co. et al's No. 1 Thompson, C S½ NE NW Sec. 34-2-9.
Drlg. 2,025 ft.

COMANCHE COUNTY

H. W. Baker's No. 1 Miller, SE SW SE NE Sec. 22-2-12w.
S.D. 130 ft.

R. E. Carson's No. 1 Barber, NE NE SE Sec. 9-1s-11w.
S.D. 500 ft.

Oscar Jones' No. 1-A Sheets, NE SW Sec. 26-3-10w.
Machine.

F. F. Stevens' No. 1 Green, SE SW Sec. 3-1-13w.
Drlg. 1,715 ft.

GARVIN COUNTY

Anderson & Kerr et al's No. 1 Rodks, NW NW SE Sec. 17-4-1w.
Location.

Charles Carter and W. S. Key, Inc.'s No. 1 Wood, C NW SW SE Sec. 5-4-3e.
S.D. 2,405 ft.

GRANT COUNTY

Helmerich & Payne's No. 1 Crouse, C NE SW Sec. 29-25-3w.
Drlg. 6,322 ft.

GREER COUNTY

M. C. Ent and R. C. Camp's No. 1 Simington, SW SE Sec. 29-5-21w.
T.D. 50 ft.

Gled Oil Co.'s No. 1 Leeker, SE cor. Sec. 6-4-21w.
Lost hole at 998 ft.; skidded machine.

Gled Oil Co.'s No. 1 Leeker, SE cor. Sec. 6-4-21w.
Drlg. 1,920 ft.

Massad & Caudle's No. 1 Crosnoe, SE SE SW Sec. 14-3-25w.
Rig.

Morgan et al's No. 1 Carder, C SW SE Sec. 19-4-22w.
T.D. 2,220 ft.; recovered drill pipe.

H. N. Payne et al's No. 1 Tressell, NW cor. Sec. 1-7-22w.
T.D. 1,785 ft.; U.R. 8-in. csg.; to deepen.

W. Y. Rockwell et al's No. 1 Stephens, C S½ S½ SE Sec. 32-6-24w.
Machine.

D. E. Whatley et al's No. 1 Hamilton, NW SE Sec. 25-4-24w.
Cellar.

HARMON COUNTY

J. J. Mathis' No. 1 Keith, SE NW SW Sec. 12-5-26w.
Machine on ground.

HUGHES COUNTY

Caprock Oil Co.'s No. 1 Parks, SW SW SE Sec. 34-7-8.
Rig.

Dandridge & Crane's No. 1 Mead, NW NW NE Sec. 17-5-9.
S.D. 1,710 ft.

Freeman et al's No. 1 Kite, NW NW NE Sec. 5-6-10.
Top sand 700 ft.; show oil; S.D.

Texas Co.'s No. 1 Keaton, NW SW Sec. 4-8-10.
Wilcox 4,062-79 ft.; dry; P.B. to 4,030 ft.; R.U. standard tools.

KAY COUNTY

Bay Oil Co.'s No. 1 Holden, SW SW SE

(Continued on Page 96)

feet from south and 405 feet from west lines of NW quarter Section 18-6-8, is a hole full of oil from Gilcrease sand at 2,780-2,801 feet, total depth, and the crew was testing.

American Bond & Investment Co.'s No. 1 Motley, C SW SE Section 10-7-3, Pottawatomie County, had Hunton lime at 4,463 feet and drilled to 4,497 feet. It was treated with acid and swabbed 70 bbls. of net oil in 24 hours. It was to be re-acidized.

Champlin Refining Co.'s No. 8 See, 990 feet south and 1,170 feet east of C Section 30-7-8, Fish Pool, Seminole County, had Dolomite at 4,110-31 feet, but drilled into water. It swabbed 85 bbls. of oil and 160 bbls. of water in 24 hours and was shut down.

Texas Co.'s No. 4 Keaton, NW NW SW Section 4-8-10, Hughes County, a wildcat which had dry Wilcox sand at 4,062-79 feet, total depth, was plugged back to 4,030 feet and standard tools were being rigged up.

Osage County

Only five wells were completed in Osage County.

Barnsdall Oil Co.'s No. 17, 1,030 feet north and 15 feet west of C Section 30-21-9, was dry at 335 feet and will be used as a pressure well.

Murray Ringold's No. 6, NE cor. SW Section 30-21-9, was abandoned at 340 feet.

Continental Oil Co.'s No. 7, NW SW SE Section 21-24-7, flowed 40 bbls. in 17 hours from sand at 2,617-79 feet and then quit. Later it swabbed 35 bbls. in 24 hours.

Sinclair Prairie Oil Co.'s No. 10, NE NW SW Section 30-25-8, is a 20-bbl. Chat producer. It was plugged back to 2,420 feet from 2,667 feet, where it had water in Hominy sand topped at 2,663 feet.

Phillips Petroleum Co. and Indian Territory Illuminating Oil Co.'s No. 14, 1,072 feet from north line and 990 feet from east lines of SE quarter Section 10-27-5, was deepened from 3,002 feet to 3,031 feet, and made an 8-bbl. pumper.

New work in the Osage County Field included Barnsdall Oil Co.'s No. 18, 1,065 feet north and 500 feet west of C Section 30-21-9, location; Ohio-Osage Oil Co.'s No. 8, 700 feet south and 800 feet east of NW cor. Section 34-21-9, location; Texas Co.'s No. 6-A, 350 feet from north and 1,320 feet from west lines of SW quarter Section 17-21-10, location; Kewanee Oil Co.'s No. 1-A, 345 feet south and same distance west of NE cor. Section 5-22-11, old total depth 1,906 feet, plugged back to 1,200 feet to acidize the Big lime; R. L. Craig's No. 6, 1,110 feet from north and 390 feet from west lines of NE quarter Section 8-22-11, old total depth 1,400 feet, plugged back to 1,200 feet to acidize Big lime at 1,100-78 feet; Barnsdall Oil Co.'s No. 4, 8E cor. NE Section 35-25-11, location; Bay Oil & Gas Co.'s No. 2, SW SE SE Section 14-26-6, in the South Burbank Pool, cellar and pits; Enterprise Transit Co.'s No. 4 Mosier, SE NW NE Section 34-26-6, location; same company's No. 3 Williams, NW SE NW Section 35-26-6.

H. F. Worley and Bay Oil Co.'s No. 1-A, NE NW SW Section 25-22-7, had Siliceous lime at 2,954 feet and swabbed 112 bbls. in 16 hours from the top of the formation.

Pure Oil Co.'s No. 3, NE SE NW Section 36-22-8, was acidized in lime at 890-930 feet and when opened later produced an estimated 5 bbls. of oil per hour.

Oklahoma County

American Oil & Refining Co. got a relatively small producer in its No. 3 Washington Park, 655 feet from north and 395 feet from west lines of SW quarter Section 35-12-3w, in the Oklahoma City Field. It was shot in Wilcox sand at 6,248-6,304 feet and produced 89 bbls. in six hours.

In the Edmond Pool, Continental Oil Co. completed No. 2 Young, NE SE NW Section 31-14-3w. It had Wilcox sand at 6,628-6,718 feet and produced 734.87 bbls. in one hour with gas at the rate of 12,600,000 feet.

Marathon Oil Co.'s No. 1 Dahl, SE cor. Section 31-14-3w, deepened from 6,533 feet to 6,643 feet made 2,273 bbls. of oil in 16½ hours through tubing and casing. It was wide open only two hours. It was completed.

Marathon Oil Co.'s No. 3 Dahl, NW NW SE Section 31-14-3w, deepened from 6,695 feet to 6,720 feet, was opened up for 20 hours and made 2,056 bbls. It was completed. Same company's No. 4 Dahl, NW NE SE Section 31-14-3w, had Wilcox sand at 6,348 feet, total depth 6,582 feet. It flowed 1,512 bbls. in three hours with gas at an average rate of 50,000,000 feet per day. Same company's No. 5 Dahl, SW SE SE Section 31-14-3w, flowed 2,479 bbls. in 5 hours and 20 minutes and later made a potential production of 11,710 bbls. per day with 12,000,000 feet of gas. All three wells were completed.

Mid-Continent Petroleum Corp. completed No. 3 Young, SW SE NE Section 31-14-3w, which had flowed 828 bbls. in two hours from Wilcox at 6,365-6,575 feet. Same company's No. 4 Young, NW SW NE Section 31-14-13w, had first Wilcox sand at 6,490-93 feet, and second Wilcox at 6,585-6,700 feet. It produced 1,831 bbls. in three hours from the second sand with gas at the rate of 12,500,000 feet.

Nemaha Oil Co. had some rig material on the ground to start No. 1 Capital Courts, 652 feet west and 1,223 feet north of SE cor. Section 23-12-3w, in the Oklahoma City Field. Larkin & Warr had rig up for No. 1 Marti, 654 feet from south and 100 feet from east lines of NE quarter Section 34-12-3w.

In the Edmond area, Slick-Urschel, Inc., made a location for No. 3 Suenram, SE NW NE Section 6-13-3w.

Burns Oil Co. was digging cellar for No. 1 Owens, 810 feet from north and 820 feet from east lines of SE quarter Section 29-13-3w, in Britton townsite.

Continental Oil Co. made a location for No. 3 Young, SE NE NW Section 31-14-3w, and for No. 4 Young, NE cor. NW Section 31-14-3w, both in the Edmond Pool.

Creek County

C. O. Buckles and others' No. 2 Vickers, NW SW NE Section 22-18-8, Creek County, had Red Fork sand at 2,569-2,619 feet, which was shot. The well made 75 bbls. in 24 hours and was completed.

New work in the county included Bryan Petroleum Co.'s No. 1 Woods, SW SW SE Section 15-18-8, moving in material; C. O. Buckles' No. 1 Buckles, SW NW NE Section 22-18-8, an old well drilling deeper, old total depth 1,656 feet, rigging up machine; C. O. Buckles' No. 2 Buckles, NW cor. NE Section 22-18-8, cellar; J. E. Crosbie's No. 2 Lacy, NE cor. NW Section 22-18-8, building rig; J. A. Hull's No. 2 Lacy, NE SE NW Section 22-18-8, location.

Lincoln County

Twin State Oil Co.'s No. 2 Cook, NW SW SW Section 1-14-3, Lincoln County, an old well plugging back from 5,068 feet, was a hole full of oil at 4,085 feet and swabbed 150 bbls. of oil in 24 hours at a total depth of 4,300 feet. It was to be shot. Same company's No. 1 Cook, SE SE SW Section 1-14-3, was dry; a hole full of water from Wilcox sand at 5,003-05 feet, total depth, and was shut down.

Stanolind Oil & Gas Co. and Amerada Petroleum Corp.'s No. 1 Cavanaugh, SE SE NE Section 31-15-3, which got water at 3,661 feet, plugged back to 3,532 feet and shot sand at 3,520-30 feet. It swabbed 12 bbls. of oil and 12 bbls. of water in 24 hours.

Logan County

Helmerich & Payne and Gypsy Oil Co.'s No. 1 Moss, SE SE SW Section 11-17-1w, Logan County, was abandoned. It was drilled to 5,194 feet, Wilcox sand topped at 5,116 feet showing only water. It was plugged back to 4,950 feet, but Misener sand showed nothing. It was not tested in Hunton lime as the rig was pulled in.

Continental Oil Co.'s No. 1 McConnell, C SE SE Section 28-17-4w, in the Crescent Pool, deepened from 6,148 feet to second Wilcox sand at 6,265 feet, total depth 6,327 feet, flowed 2,211 bbls. in 24 hours.

In the same pool, Gypsy Oil Co. and Carter Oil Co.'s No. 3 Knowles, C SW NW Section 34-17-4w, deepened from 6,220 feet to second Wilcox sand at 6,333-37 feet, total depth, flowed 1,347 bbls. in 24 hours, and then 653 bbls. of oil and 30 bbls. of water in 20 hours through 2½-inch tubing. The oil was cut 12 per cent.

Noble County

Midco Petroleum Corp. has cellar dug for No. 1-A Neil, 400 feet from south and 800 feet from west lines of SE quarter Section 15-23-2w, in the Billings Pool, Noble County. Phillips Petroleum Co. made a location for No. 1-A F. P. O'Neil, SE SE SE Section 16-23-2w.

Stanolind Oil & Gas Co.'s No. 5 DeVore, NW SE NW Section 27-22-2w, in the Polo Pool, swabbed 145 bbls. of oil from Dolomite at 4,848-4,938 feet. It was not completed.

Magnolia Petroleum Co.'s No. 1 Sharp, C SW SW Section 34-20-2w, in the Lucien Pool, was acidized in second Wilcox sand at 5,130-39 feet and flowed 144 bbls. in 20 hours and later flowed 190 bbls. in 24 hours. It was to be re-treated with acid. This sand had been shot previously with no results in oil production.

Kingfisher County

J. S. Cosden will plug back his No. 1 Gardner, NE NE NW Section 31-19-4w, in Kingfisher County, which had been drilled to 6,185 feet and the 6-inch casing was being pulled.

Pittsburg County

Choctaw Gas Co.'s No. 1 Bunyard, SE SE NE Section 18-7-18, Pittsburg County, is a 3,500,000-foot gasser from sand at 1,931-2,100 feet.

Comanche County

Ashcraft & Palmer have 6⅝-inch casing set at 761 feet in No. 3 School land, NE cor. SE SE Section 20-2-10w, Comanche County.

Greer County

Gled Oil Co. had material on the ground for No. 1 Simpson, NE NW NE Section 22-5-22w, Greer County.

Cleveland County

Asa Lee Mayes, Inc., had cellar and pits dug for No. 1 Faut, SW SW NE Section 27-10-2w, a wildcat in Cleveland County.

Okfuskee County

C. W. Hicks made a location for No. 2 Lair, NE NW SE Section 26-10-10, Okfuskee County. Sunray Oil Co. had cellar and pits dug for No. 1 Culla, NE SW NE Section 13-12-8.

Southern Counties

Selby Oil & Gas Co.'s No. 1 Cobb, NE NW NE Section 22-1n-20w, Jackson County, shot with 10 quarts at 1,130-37

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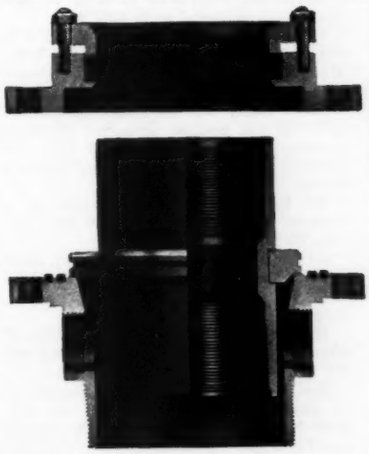

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feet, started at 14 bbls. of 42 gravity oil on the pump.

Burke-Greis Oil Co.'s No. 1 Milbrant, SW NW SW Section 31-3-19w, Jackson County, was dry and abandoned at 1,320 feet. The top of the granite was found at 1,045 feet.

Golden & Cochran's No. 1-A Gann, 870 feet north and 510 feet west of C Section 31-2n-4w, Stephens County, is a 9-bbl. completion on the pump, from pay at 924-35 feet.

John S. Armor's No. 1-A Drummond, C S half NW NW Section 5-1s-8w, Stephens County, had salt water at 2,388-2,428 feet, total depth 2,504 feet, and was abandoned.

Louis Sikes' No. 4 Dolan, 475 feet south and 1,050 feet east of NW cor. Section 15-1s-8w, started at 75 bbls. and 500,000 feet of gas. It was completed in sand at 2,089-99 feet.

Mudge Oil Co.'s No. 43 Woods, 710 feet south and 150 feet east of NW cor. Section 26-1s-5w, Stephens County, completed at 670-88 feet, started at 10 bbls. on the pump.

Shasta Oil Co. completed No. 10 Cobb, 648 feet from south and 1,170 feet from east lines of NE quarter Section 2-2s-10w, Cotton County. It had sand at 2,134-55 feet, and pumped 26 bbls. in 24 hours.

Cox & Hamon's No. 3 fee, near C W half of E half E half Section 17-2s-2w, Carter County, was drilled to 2,496 feet and plugged back to 2,070 feet, and completed. It flowed 65 bbls. in 24 hours through tubing from a sand series at 1,536-2,069 feet.

Skelly Oil Co.'s No. 1 M. T. Pierce-C, NW SE NE Section 17-2s-2w, Carter County, flowed 28 bbls. through 2-inch tubing from a sand series at 2,188-2,394 feet, and was completed.

Cortez Oil Co.'s No. 1 Harrell, NE NE SW Section 20-4s-2w, Carter County, made a 20-bbl. pumper, completed in sands from 1,505-1,810 feet.

Lavelle Coal Co.'s No. 7 Eppler, SE cor. NE NE Section 36-7s-5e, Marshall County, was completed in sand at 499-512 feet and made a 10-bbl. well.

Fleming & Kimbell's No. 2 Snell-B, SW cor. NW SW NW Section 31-7s-6e, Marshall County, is a 10-bbl. completion at 446-60 feet.

Louis Sikes' No. 10 Franklin, SE cor. NW SE SE Section 18-1s-8w, Stephens County, had sand at 1,845-65 feet, and set pipe on top of the sand but had not tested.

W. L. Kistler made a location for a wildcat, No. 1 Brown, SW SW SW Section 19-1s-12e, Atoka County.

J. W. McAllister was drilling at 2,038 feet in No. 2 Negh, 1,180 feet south and 475 feet west of C Section 11-2s-8w, Stephens County.

Westheimer & Daube were drilling at 535 feet in No. 1 Lewis, NE cor. SE SE SE Section 4-2s-5w, Stephens County.

Shell Petroleum Corp. was rigging up to start No. 55 Franklin, NE cor. SW NW NE Section 8-4s-3w, in the Healdton Pool, Carter County.

Sinclair Prairie Oil Co. made a location for No. 1 Stockton, SE SE SW Section 26-6s-2w, Love County.

E. B. Abernathy spudded No. 1 Christian, 400 feet north and 1,245 feet west of SE cor. Section 1-6s-19e, in Choctaw County. It was shut down.

Lavell Coal Co. made a location for No. 8 Eppler, SE cor. NE SE NE Section 36-7s-5e, in Marshall County.

Twin State Oil Co.'s No. 1 Bridenthal, NW NE NE Section 9-1s-3w, Carter County, swabbed 92½ bbls. in 24 hours. It has sands from 2,650-2,791 feet. It is not a completion.

Rocky Mountain Area

(Continued from Page 83)

A. B. Cobb's No. 1 Young, C SE NE Sec. 5-22-5w.
Spudding 125 ft.

Consolidated Gas Co.'s No. 5 Tribal, Lot 5, Sec. 3-34-6w.
T.D. 2,840 ft.; 8¼-in. at 2,810 ft., bailing.

Consolidated Gas Co.'s No. 1 Arnold-State, C SW NE Sec. 26-35-6w.
Spudding 150 ft.

Dakota-Montana Oil Co.'s No. 3 Winkler, 440 ft. S of N line and 590 ft. E of W line, Sec. 26-35-6w.
Drlg. 1,500 ft.

Goodstein & Smith's No. 1 Olson, C NE SE Sec. 26-34-6w.
Location.

Grant Oil Co.'s No. 1 Bakke, C NW NE Sec. 32-34-5w (formerly R. C. Jeffries).
Rig on location.

Kately-Drumheller's No. 2 Ward, SE NE Sec. 10-34-6w.
Set 6⅝-in. at 2,886 ft.

Kately's No. 1 Thomson, SW NW SW Sec. 25-36-6w.
Drlg. 2,300 ft.

Lawler & Hoer's No. 1 Downen, C SE SW Sec. 9-33-5w.
Bldg. rig.

Montana Power Gas Co.'s No. 1 Bonnett, C SE NW Sec. 4-32-5w.
Drlg. 2,740 ft.

Montana Power Gas Co.'s No. 1 G. Carrigeaux, C SE NW Sec. 28-33-5w.
Drlg. 395 ft.

Montana Power Gas Co.'s No. 2 Heiland Unit, NE SW SE Sec. 27-36-5w.
Set 7-in. at 575 ft., W.O.C.

Montana Power Gas Co.'s No. 1 Lookhoft, C SW SE Sec. 28-33-5w.
Drlg. at 3,041 ft. in sand, 1,200 ft. of oil.

Nadeau Bros.' No. 2 Coover, C NE NE Sec. 17-33-5w.
Drlg. at 2,907 ft. in sand, 1,200 ft. of oil.

Par Oil Co.'s No. 5 Haines, C SW SE Sec. 2-34-6w.
Drlg. at 700 ft.

Santa Rita O. & G. Co.'s No. 1 Government, C NE SW Sec. 4-32-5w.
Drlg. at 2,280 ft.

Santa Rita O. & G. Co.'s No. 1 McCabe, C NW SW Sec. 28-33-5w.
T.D. 2,380 ft.; fshg.

Santa Rita O. & G. Co.'s No. 1 Richie, C NW SW Sec. 5-32-5w.
Drlg. 2,757 ft.; 6⅝-in. at 2,715 ft.; bailg.

Santa Rita O. & G. Co.'s No. 1 Fisk, C SW SE Sec. 14-35-6w.
7-in. at 2,800 ft.; moving in spudder.

Santa Rita O. & G. Co.'s No. 1 Stahl, C NW SE Sec. 20-33-5w.
Location.

Santa Rita O. & G. Co.'s No. 1 Savage, C NW SW Sec. 9-33-5w.
Location.

Santa Rita O. & G. Co.'s No. 5 Tribal, C SW NW Sec. 15-35-6w.
Spudding at 200 ft.

Santa Rita O. & G. Co.'s No. 1 Whitehead, C SW SE Sec. 23-35-6w.
Rigging rotary.

R. C. Tarrant's No. 2 Getty, NW NW SE Sec. 2-34-6w.
S.D. 2,700 ft.

R. C. Tarrant's No. 4 Britton, C SW SW Sec. 12-34-6w.
Rig on location.

R. C. Tarrant's No. 6 Haglund, Jr., C SE NW Sec. 13-34-6w.
Rig on location.

R. C. Tarrant's No. 1 O'Brien, C SE SW Sec. 23-34-5w.
Drlg. 600 ft.; top Colo. 357 ft.

R. C. Tarrant's No. 2 McClellan, C NW SE Sec. 12-34-6w.
Rig on location; (formerly No. 1 fee).

R. C. Tarrant's No. 1 Ruetten-Wold, C NW NE Sec. 13-34-6w.
Drlg. 2,450 ft.

Texas Co.'s No. 1 Aarronson et al, C N½ SE Sec. 21-35-6w.
T.D. 3,042 ft. sand at 3,025-35 ft. shot., some water, S.D.

Texas Co.'s No. 1 Marie Hagerty, C SE NE Sec. 9-34-6w.
Cmtd. 7-in. at 2,930 ft. with 60 sacks.

Texas Co.'s No. 1 Morgan, C NE NW Sec. 32-32-5w.
Bldg. rig.

Liberty County

J. H. Hamilton and others' No. 1 Northern Farms, C NE SW Section 10-37-5e, on the Flat Coulee structure, near the Canadian boundary and 60 miles east of the Cut Bank Field, the discovery well, reported bailing 60 bbls. in 12 hours, is estimated at 15 to 20 bbls. a day on the pump. It found the sand at 2,803-79 feet and it was saturated to the bottom. It is the equivalent of the Cut Bank producing horizon. The 8¼-inch was set at 2,616 feet and the 6¼-inch at 2,778 feet.

John Wilde's No. 2-A Mahoney, W SE SW Sec. 22-37-4e.
Drlg. at 1,543 ft., show of oil in the Bow Island sand.

PETROLEUM COUNTY

Hardendorf & Keyes' No. 1 Austed, SW NW SE Sec. 22-13n-28e.
Drlg. at 150 ft.

PHILLIPS COUNTY

Little Rocky Dev. Co.'s No. 1, SE SE SE Sec. 17-24-24.
S.D. to finance at 252 ft.

PONDERA COUNTY

Texas Co.'s No. 1, Unit 5, C SW SW Sec. 2-30-5w.
Bldg. rig and moving in cable tools.

ROSEBUD COUNTY

Birney O. & G. Co.'s No. 1, SW SW SW Sec. 7-8s-42e.
Drlg. below 325 ft.

Toole County

In the Kevin-Sunburst Field, Crumley & Son's No. 2 Fryberger, C NE NE Section 24-35-1w, is estimated at 15 bbls. a day in the Ellis-Madison contact at 1,544-70 feet. Texas Co.'s No. 9 Bruins, C SE Section 9-35-2w, swabbed 100 bbls. in 24 hours after acidizing with 500 gallons. Total depth is 1,642 feet. The Sunburst was at 1,380-95 feet and the contact at 1,636-42 feet. New Era Fuel Co.'s No. 7 Lorensen, CNL NW NE Section 27-35-2w, made 10 bbls. a day before acidizing from the pay at 1,503-08 feet. A. E. Crumley's No. 5 Shaw, NW SE SW Section 35-36-2w, failed to respond to acid treatment and was plugged and abandoned at 1,830 feet.

Bi-State Oil Co.'s No. 4 Haenel, SW SW Sec. 3-34-1w.
T.D. 850 ft.

E. B. Coolidge's No. 1 Shaw, SW SE NE Sec. 35-36-2w.
Drlg. 1,400 ft.

P. L. Eddy's No. 5 Seabrook, NE SW SW Sec. 19-35-2w.
Location.

Fraser & Kluth's No. 1 Severance, C SE NE Sec. 29-32-2e.
Drlg. 1,520 ft.

Graham Oil Co.'s No. 2 McDonald, E SE SW Sec. 19-35-2w.
Rigging up.

Imperial Oil Co.'s No. 5 Craig, C NE NE Sec. 19-35-1w.
Sidetracking at 1,125 ft.

T. P. Kyle's No. 1 Clark, SW SW SE Sec. 19-37n-1e.
Resuming at 1,010 ft.

McKnight & Stock's No. 2 State, SW NW NW Sec. 16-35-2w.
Rigging.

Monopeg Oils, Ltd.'s No. 3 Dipple, S SW NW Sec. 28-35-1w.
Fishing at 1,355 ft.; one string recovered.

Mon-Tex Pet. Co.'s No. 1 fee, SE NW Sec. 27-34-1w.
Rigging.

Nepstead-Vanderpas' No. 19 Government, SE NW Sec. 33-35-2w.
T.D. 1,495 ft., will acidize; show of oil and water at 1,467-74 ft.

C. T. Olen's No. 1 Engermoen, SW SW NW Sec. 14-35-2w.
Drlg. 525 ft. (cor.).

E. O. Reickhoff's No. 2 Government, SW SW NE Sec. 3-35-3w.
Drlg. 125 ft. (cor.).

Pfabe & Engleking's No. 8 Seabrook, SE SW SE Sec. 19-35-2w.
Small well at 1,519-29 ft.; will acidize.

C. Leonard Smith's No. 1 Eckhoff, C SE Sec. 6-33n-2e.
S.D. 575 ft. for new boiler.

C. Leonard Smith's No. 1 Federal Land Bank, C NE SE Sec. 11-33n-1e.
Spudding at 175 ft.

C. Leonard Smith's No. 1 L. Halverson, C NE SE Sec. 18-33n-2e.
Spudding at 125 ft.

C. Leonard Smith's No. 1 H. Halverson, NW NE Sec. 18-33n-2e.
Rigging light rotary at 250 ft.

Texas Co.'s No. 1 Kenny, C NE NE Sec. 15-35-2w.
Rigging.

UTAH

DAGGETT COUNTY

Mountain Fuel Supply Co.'s No. 2 Murphy, NE NE Sec. 21-3n-24w.
Resuming at 6,030 ft.; running formation tester.

UTAH COUNTY

Diamond Oil Co.'s No. 4 Government, CSL SE NW Sec. 16-8s-5e.
Drlg. at 3,735 ft. and showing considerable gas.

WASHINGTON COUNTY

Arrowhead Pet. Co.'s No. 2 Escalante, NW NW NE Sec. 19-43-15.
T.D. 4,114 ft.; plugged back to 3,250 ft., shot and cleaning out.

Arrowhead Pet. Co.'s No. 1-A, SE SW NE Sec. 1-42-15.
Drlg. 1,400 ft.

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Potentiality of Montebello Field Has Operators Guessing Because of Recent Developments

By L. P. STOCKMAN
Staff Correspondent, California Fields

LOS ANGELES, Calif., June 24.—The potentiality of the Montebello Field extension has operators guessing because developments up to the present tend to indicate that there will not be any extension. The importance of this area should be rather well defined within the next 30 days as the Texas Co. has a well under way that should shed a lot of light on whether operators are chasing a rainbow or whether the extension is really of importance from a production standpoint. This section of the Montebello Field has proven to be one of the most perplexing problems that has confronted the industry in a long time. Paleontological data indicate that the Montebello structure is dipping instead of coming up again and so this potential field is still somewhat of an enigma. This is especially true because paleontologists differ as to their interpretations because the bugs do not seem to be uniform through a given thickness.

The Universal Consolidated's latest well, No. 2 Nutt, did not do the optimists any good because it has been wet and the company is still engaged in remedial work. This well has been plugged back so many times that no one knows just where it is at from day to day. Bug dope, paleontological data to technical men, indicates that the Miocene is plunging down at a rapid rate and does not offer much evidence of resulting in commercial production for this area, but it might be well to remember that subsequent drilling might change the present aspect of the situation. On the other hand there seems to be a difference of opinion as to the interpretation of paleontological data with the result that there is no unanimity of opinion. The Texas Co.'s test should reach the depth at which production should be encountered within the next 15 days and the outcome of work on this well should settle the question one way or the other.

Playa Del Rey

Recent completions in the southeastern extension of Playa Del Rey Field of Los Angeles Basin tend to indicate that this district is nearing the end of the rope and that it can not possibly make its established allowable. A few weeks ago new wells were coming in with a bang but now they have reached the stage where some operators have found it necessary to resort to the use of compressors or pumping equipment. During the current week the Union's No. 9 Del Rey was finished but this new well was only good for 374 bbls. of clean 23.6 gravity oil per day from 5,976 feet. Thomas Kelly's new well, his first completion in this area, on the other hand was good for 1,974 bbls. of 23.3 gravity oil cutting 7 per cent per day from 6,548 feet.

The Coast Petroleum Co.'s No. 1 Del Rey, a recent completion, died a few days ago and it is being rigged up to pump. The Ritelube Oil Co. is also installing pumping equipment on a well in this area but it is rather questionable whether this well will prove commercially profitable. The company has had a lot of trouble finishing this new producer due to lack of gas and a rather troublesome water problem. It appears quite probable that several potential producers will be given a chance to make a bid for production in this field within the next 10 days and consequently we may anticipate the completion of a few relatively large wells. As long as producing wells are held in restraint and the gas cap maintained it is logical to assume that new wells will be finished with high allowables. If the field is opened up, however, the decline in pressure would be more noticeable and new wells would not show half of their potential under present conditions.

Semi-Tropic

The Semi-Tropic gas field of Kern County is rapidly becoming one of the most active fields in the State and plans already approved call for the starting of six new wells within the next 30 days. The real significance of this field is probably not recognized by operators in general as most everyone regards it as a strictly commercial gas field. The Standard Oil Co., however, is sitting on top of the world, because as long as this field is kept under control it will always be in a position to inject this gas into its acreage in the Kettleman North Dome at a nominal cost and thus substantially increase its ultimate recovery of crude oil. This is an eventuality of the future and much depends upon the productivity of both fields.

During the current week the Standard completed No. 1 Towle in Section 7-27-23 and this new well was good for approximately 8,000,000 feet of natural gas per day from 2,343 feet. This well blew out several days ago while the crew was making a water shut-off test, but it was subdued without much trouble. Both the Standard and the Fullerton Oil Co. have staked additional locations in this field and they can be expected to proceed with work along conservative lines. The Milham Exploration Co. has spudded in its test in Section 15-27-23 and this well is already down below 1,500 feet. Additional work is also contemplated by the Standard in the Delano gas field and we may anticipate a conservatice but aggressive drilling program in this district.

Mount Poso

The Shell Oil Co. added another new well to its list of producers in the Mount Poso Field of Kern County by finishing No. 10 Vedder-Rall pumping 751 bbls. of clean 16.3 gravity oil per day from 1,922 feet after the hole had been completed with a 5⅝-inch liner. The Modoc Petroleum's No. 3 Vedder proved good for 148 bbls. of clean 15.9 gravity oil per day when put on a production test following completion at 1,534 feet. This well was brought in barefoot as the hole is open between 1,518 feet and bottom. The Union Oil Co. is putting the finishing touches on No. 24 S. & M. in this field and it should be tanking oil within the next few days. This well has shown more than the usual amount of sand trouble but looks good for commercial production. The O. F. W. Oil Co.'s well No. 1 in Section 27-26-28 was given a production test during the early part of the current week, but it sanded up after pumping at the rate of 300 bbls. per day for about 18 hours.

Out on the Kern Front, the Republic Petroleum Co. finished its No. 1 Strassburger and this new well was brought in pumping 310 bbls. of clean 15.6 gravity oil per day from 2,116 feet after the hole had been completed with an 8⅝-inch liner carrying 250 feet of perforated. The Kern Front has become rather active during the past month and we may anticipate additional completions in this section of the field within the next 60 days. These new wells are all showing up in good shape and operators holding acreage contemplate additional work. In the Edison Field of Kern County, the A. T. Jergins Trust successfully completed No. 4-13-A in Section 13-30-29 and this new well was finished pumping 321 bbls. of clean 16.9 gravity oil per day from 1,285 feet.

Santa Fe Springs

The Union Oil Co. added another new well to its list of producers in the Santa Fe Springs Field this week by completing No. 79 Bell and will probably have another potential producer ready for production within the next 15 days. No. 79 Bell was bottomed at 4,471 feet and finished with a 6⅝-inch liner including 351 feet of perforated and showed an initial daily production of 240 bbls. of clean 34.3 gravity oil. In the Dominguez Field, where the Union and Shell have found it necessary to proceed with aggressive drilling in order to comply with lease requirements, the Shell chalked up a new well by finishing No. 73 Reyes flowing 1,344 bbls. of very clean 35.1 gravity oil per day from 4,530 feet after the hole had been finished with a 5¾-inch liner carrying 245 feet of perforated. The Milpet Oil Co.'s No. 8 Campbell finished last week has shown a consistent increase in production and at present is the largest new well to be finished in the Long Beach Field in a long time. This new well is flowing 1,578 bbls. of clean 28.6 gravity oil per day and will go a long way toward stimulating ag-

TANKER SHIPMENTS FROM LOS ANGELES TO DOMESTIC AND FOREIGN PORTS

	June 9		June 2			
Intercoastal-domestic:	Total this week	Daily average	Total last week	Daily average	This year to date	Same time last year
Fuel oil	.....	.....	.....	.....	.....	7,188,504
Diesel and gas oil	.....	.....	.....	.....	527,098	931,159
Gasoline	233,450	33,350	191,100	27,300	3,431,261	3,021,612
Kerosene	.....	.....	.....	.....	669,351	568,197
Other finished oil	.....	.....	.....	.....	.....	15,171
Foreign exports:						
Crude oil	.....	.....	.....	.....	4,527,587	3,374,615
Fuel oil	191,732	27,390	480,522	68,646	5,503,922	5,667,386
Diesel and gas oil	41,505	5,929	183,629	26,233	1,991,556	1,858,298
Gasoline	321,126	45,875	309,922	44,275	2,615,961	1,862,521
Kerosene	167,304	23,901	38,008	5,430	715,298	889,597
Other finished oil	.....	.....	.....	.....	.....	3,529
Other unfinished oil	.....	.....	6,009	858	56,161	127,271
Coastwise-domestic:						
Crude oil	69,061	9,866	64,310	9,187	2,436,238	4,317,951
Fuel oil	266,107	38,015	295,393	42,199	4,230,402	4,373,103
Diesel and gas oil	.....	.....	15,951	2,279	429,384	359,684
Gasoline	161,182	23,026	269,890	38,556	4,024,312	4,811,142
Kerosene	.....	.....	10,785	1,541	57,833	80,217

TANKER SHIPMENTS FROM SAN FRANCISCO TO DOMESTIC AND FOREIGN PORTS

Intercoastal-domestic:						
Fuel oil	.....	.....	.....	.....	.....	110,650
Diesel and gas oil	.....	.....	.....	.....	157,258	448,113
Gasoline	.....	.....	.....	.....	.....	72,625
Kerosene	.....	.....	.....	.....	149,715	197,498
Asphalt	.....	.....	66,550	9,507	209,047	.....
Lubricants	.....	.....	.....	.....	19,550	18,331
Foreign exports:						
Crude oil	.....	.....	171,880	24,554	1,355,979	803,155
Fuel oil	18,124	2,589	18,761	2,680	812,473	742,770
Diesel and gas oil	.....	.....	62,448	8,921	522,222	679,154
Gasoline	.....	.....	248,107	35,444	1,405,148	1,574,402
Kerosene	.....	.....	168,864	24,123	447,556	377,226
Lubricants	.....	.....	24,559	3,508	111,035	72,395
Other finished oil	.....	.....	.....	.....	.....	2,760
Other unfinished oil	.....	.....	.....	.....	.....	5,750
Coastwise-domestic:						
Fuel oil	.....	.....	115,940	16,563	1,958,711	1,730,474
Diesel and gas oil	.....	.....	.....	.....	134,687	95,371
Gasoline	208,334	29,833	31,180	4,454	2,136,761	1,625,415
Kerosene	7,593	1,085	.....	.....	38,437	48,112

IMPORTANT SOUTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Allen Bros., No. 1 Athens, Los Angeles Co.	18- 3-13	....	bldg. rig
Republic Pet. Co., No. 1 Lawndale, Los Angeles Co.	18- 3-14	5,004	cleaning out
Associated Oil Co., No. 4 Inglewood Deep, Los Angeles Co.	7- 2-14	3,561	sd. sh. drlg.
Scientia Oil Co., No. 1 Inglewood Deep, Los Angeles Co.	7- 2-14	4,552	will cut
Standard Oil Co., No. 5 Inglewood Deep, Los Angeles Co.	17- 2-14	6,284	suspended
Standard Oil Co., No. 7 Inglewood Deep, Los Angeles Co.	17- 2-14	....	bldg. rig
Shell Oil Co., No. 3 Inglewood Deep, Los Angeles Co.	8- 2-14	3,305	test W.S.O.
Sunbar Pet. Co., No. 1 Inglewood Deep, Los Angeles Co.	16- 2-14	....	bldg. rig
Ohio Oil Co., No. 17 Del Rey, Los Angeles Co.	28- 2-15	3,853	rig to pump
Blackline Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,310	sd. sh. drlg.
Harper & Williams, No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,265	cmtd. 6,260
Coast Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,696	died
McAdams, Ed., No. 2 Del Rey, Los Angeles Co.	27- 2-15	6,324	completing
Dabney Pet. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	bldg. rig
Ritelube Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,975	rig to pump
Mathews Pet. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,440	Schist
Birch Royer Oil Co., No. 1 Del Rey, Los Angeles Co.	34- 2-15	6,372	sd. sh. drlg.
Embie Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,330	sd. sh. drlg.
Joyce Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	6,739	cleaning out
Royalty Serv. Corp., No. 2 Del Rey, Los Angeles Co.	27- 2-15	6,440	will cmt.
Union Oil Co., No. 12 Del Rey, Los Angeles Co.	27- 2-15	5,976	flow 350 b.d.
Union Oil Co., No. 13 Del Rey, Los Angeles Co.	27- 2-15	4,930	sd. sh. drlg.
Union Oil Co., No. 14 Del Rey, Los Angeles Co.	27- 2-15	....	rigging up
Herndon Dev. Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	2,452	sd. sh. drlg.
Treasure Oil Co., No. 1 Del Rey, Los Angeles Co.	27- 2-15	....	foundation
West American Oil Co., No. 1 Bandini, Los Angeles Co.	17- 2-12	3,772	sd. sh. drlg.
Western Gulf, No. 1 Bandini, Los Angeles Co.	16- 2-12	5,475	sd. sh. drlg.
Vanco Dev. Co., No. 1 Artesia, Los Angeles Co.	25- 3-12	4,980	sd. sh. drlg.
Monarch Oil Corp., No. 1 Topanga, Los Angeles Co.	5- 1-16	131	sd. drlg.
Texas Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	4,281	hd. sd. drlg.
Universal Consd., No. 2 Montebello, Los Angeles Co.	5- 2-11	5,990	P.B. 5,854
Woodward Oil Co., No. 1 Montebello, Los Angeles Co.	4- 2-11	2,010	cmtd. 1,020
Wilshire Oil Co., No. 1 Montebello, Los Angeles Co.	5- 2-11	3,000	hd. sd. drlg.
Frontier Oil Co., No. 1 Pico, Los Angeles Co.	7- 2-11	3,600	cleaning out
Pressell & Tull, No. 1 Puente Hills, Los Angeles Co.	30- 2-9	4,337	suspended
Barstow Oil Co., No. 1 Sunray, Los Angeles Co.	35- 5-16	4,040	suspended
International Dev. Co., No. 1 Saugus, Los Angeles Co.	34- 5-16	1,650	flow gas
Wilshire Oil Co., No. 1 Newport, Orange Co.	29- 6-10	1,080	sd. sh. drlg.
Great American Pet. Co., No. 2 East Coyote, Orange Co.	22- 3-10	3,474	suspended
Viking Oil Co., No. 1 Richfield, Orange Co.	29- 3-9	3,000	hd. sd. drlg.
Great American Pet. Co., No. 4 Chino, San Bernardino Co.	7- 2-8	967	suspended

gressive development work in the immediate area. This new well is of more importance than might appear on the surface because it indicates the possible completion of several more large wells in the neighborhood.

Kettleman Hills

The Continental Oil Co. had its hands full in the South Dome of Kettleman Hills when its No. 28 in Section 7-25-30 blew in flowing 25,000 bbls. of hot salt water per day from 6,903 feet. The company has not yet shown any indication of quitting, however, and has already reentered the hole after the flow had been killed. This is a characteristic of this section of the structure and the company rather expected it. A few years ago the Ohio Oil Co. got all ready to make a production test on a well that looked rather good and had most of the company executives on hand when it came in flowing about 50,000 bbls. of hot salt water per day. This hole was abandoned shortly after, but a number of operators have felt that it was not given a conclusive test. The Continental Oil Co. expects to make a thorough test and consequently this work may be watched with interest because it is generally acknowledged that the Ohio's test looked very promising before water broke in. The Petroleum Securities is making preparations to start a third test in the Middle Dome of Kettleman Hills and spud should be made within the next few weeks. The Standard Oil Co. is rotating ahead at 6,900 feet in its second well in the Middle Dome and should finish this project within the next 30 days. Operators in the Middle Dome have not produced a single barrel of crude oil for the past 60 days but expect to resume production again in the near future. In the Santa Maria district, the Casmite Oil Co. has completed No. 1 Righetti pumping 275 bbls. of relatively clean 12.3 gravity oil per day from 1,745 feet.

NEW HAND FIRE EXTINGUISHER

A new hand fire extinguisher of the carbon dioxide type has been brought onto the market by Walter Kidde & Co., Bloomfield, N. J. This extinguisher, known as LUX Model 2, employs the same smothering method as the larger LUX systems. It is especially designed for incipient fires in garages, trucks or isolated oil and electrical equipment. The extinguishing agent, carbon dioxide gas, is good until used. The model is of rugged construction, weighs 10¾ pounds and contains 2 pounds of gas. Operation is simplified by a seat type valve, which allows discharge to be turned on or off like a water faucet.

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IMPORTANT NORTHERN CALIFORNIA WILDCATS

Company, well and location—	S.T.R.	Depth	Status
Shell Oil Co., No. 5 Capitan, Santa Barbara Co.	5- 4-30	....	rigging up
General Petroleum, No. 15 Capitan, Santa Barbara Co.	32- 5-30	....	rigging up
Freeman, M. J., No. 1 Purisima, Santa Barbara Co.	11- 7-32	1,025	suspended
Casmite Co., No. 1 Casmalia, Santa Barbara Co.	13- 9-35	1,745	pump 260 b.d.
Shell Oil Co., No. 1 Goleta, Santa Barbara Co.	10- 4-29	....	bldg. rig
Scully & Snyder, No. 1 Naples, Santa Barbara Co.	7- 4-29	6,447	suspended
Barnsdall-Rio Grande, No. 12 Elwood, Santa Barbara Co.	tideland	3,749	P.B. 3,707
Barnsdall-Rio Grande, No. 2 Elwood, Santa Barbara Co.	15- 4-29	6,492	suspended
Bankline Oil Co., No. 6 Elwood, Santa Barbara Co.	tideland	3,575	rd. sd. drlg.
Signal Oil & Gas Co., No. 4 Elwood, Santa Barbara Co.	tideland	2,730	sd. sh. drlg.
Caroline Spandling, No. 10 Elwood, Santa Barbara Co.	tideland	3,521	cmtd. 3,513
Las Posas Pet., No. 1 Las Posas, Ventura Co.	22- 3-20	8,116	fishing
Calco Pet. Co., No. 1 Las Posas, Ventura Co.	17- 3-20	1,649	will cmt.
Union Oil Co., No. 1 Bardsdale, Ventura Co.	12- 3-20	3,336	sd. sh. drlg.
Dabney, H. K., No. 1 Bardsdale, Ventura Co.	2- 3-19	510	suspended
Bankline Oil Co., No. 1 Sespe, Ventura Co.	36- 5-20	....	bldg. road
Oil Ridge Oil Co., No. 1 Ventura, Ventura Co.	1- 4-19	1,665	O.S. drlg.
El Rancho Oil Co., No. 1 South Mountain, Ventura Co.	9- 3-19	1,113	suspended
Texas Oil Co., No. 128 South Mountain, Ventura Co.	4- 3-19	7,131	hd. sh. drlg.
Paloma Oil Co., No. 1 Susana, Ventura Co.	12- 2-18	1,541	sd. sh. drlg.
Bolsa Chica Oil Co., No. 2 Piru, Ventura Co.	4- 4-18	2,788	cleaning out
High Mesa Oil Co., No. 1 Ojai, Ventura Co.	16- 4-22	675	suspended
Prop. Service Corp., No. 1 Lloyd, Ventura Co.	24- 3-23	8,090	gr. sd. drlg.
General Pet., No. 1 Oxnard, Ventura Co.	26- 2-23	....	location
Continental Oil Co., No. 4 San Miguelito, Ventura Co.	23- 3-24	4,662	fish D.P.
Amerada Pet., No. 3 Blackwell Corner, Kern Co.	17-26-19	2,851	sd. sh. drlg.
Standard Oil Co., No. 1 Lost Hills, Kern Co.	2-26-20	4,143	cleaning out
Continental Oil Co., No. 1 McDonald, Kern Co.	7-28-20	5,171	sd. sh. drlg.
Belmac Drlg. Co., No. 1 McKittrick, Kern Co.	22-29-21	....	rigging up
General Pet. Co., No. 1 South Belridge, Kern Co.	30-28-21	11,377	suspended
Standard Oil Co., No. 1-A North Belridge, Kern Co.	36-27-20	8,553	prod. test
Standard Oil Co., No. 2 North Belridge, Kern Co.	36-27-20	8,000	hd. sh. drlg.
Belridge Oil Co., No. 32-35 North Belridge, Kern Co.	35-27-20	6,364	sd. sh. drlg.
Belridge Oil Co., No. 28-35 North Belridge, Kern Co.	35-27-20	6,598	sd. sh. drlg.
Union Oil Co., No. 19 North Belridge, Kern Co.	36-27-20	3,242	sd. sh. drlg.
Union Oil Co., No. 20 North Belridge, Kern Co.	36-27-20	3,997	sd. sh. drlg.
Woods & Bailey, No. 1 McFarland, Kern Co.	16-26-26	....	bldg. rig
Cimarron Oil Corp., No. 1 Delano, Kern Co.	14-25-27	2,440	sd. sh. drlg.
Standard Oil Co., No. 1 Delano, Kern Co.	1-25-23	2,455	gas; shut in
Standard Oil Co., No. 2 Delano, Kern Co.	1-25-23	3,256	gas; shut in
Standard Oil Co., No. 3 Delano, Kern Co.	12-25-23	3,695	sd. sh. drlg.
Standard Oil Co., No. 4 Delano, Kern Co.	34-24-23	....	rigging up
Trico Oil & Gas Co., No. 1 Delano, Kern Co.	3-25-23	2,525	gas well
Trico Oil & Gas Co., No. 3 Delano, Kern Co.	36-24-22	4,835	P.B. 2,223
Trico Oil & Gas Co., No. 5 Delano, Kern Co	3-25-23	1,041	sd. sh. drlg.
Baker, Cliff, No. 1 Poso Creek, Kern Co.	33-27-28	1,031	sd. sh. drlg.
Getty, George F., No. 6 Kern Front, Kern Co.	26-28-27	....	bldg. rig
Kern River Oilfields, No. 3 Kern Front, Kern Co.	25-28-27	1,846	cmtd. 1,823
Bishop Oil Co., No. 1 Kern Front, Kern Co.	26-28-27	....	bldg. rig
Deep Zone Oil Co., No. 1 Kern Front, Kern Co.	29-28-27	....	rigging up
Republic Petroleum, No. 1 Kern Front, Kern Co.	24-28-27	2,116	pump 300 b.d.
Golden Bear Oil Co., No. 1 Kern Front, Kern Co.	32-27-27	5,851	suspended
Stevens Pet. Co., No. 1 Kern Front, Kern Co.	13-27-27	2,653	suspended
Barnsdale Oil Co., No. 4 Mountain View, Kern Co.	22-30-29	4,884	sd. sh. drlg.
Hancock Oil Co., No. 7 Mountain View, Kern Co.	14-30-28	5,265	sd. sh. drlg.
Shell Oil Co., No. 2 Mountain View, Kern Co.	32-30-29	5,188	form., test
C. C. M. Oil Co., No. 1 Mountain View, Kern Co.	11-30-28	5,440	O.S. drlg.
Texas Co., No. 5 Mountain View, Kern Co.	15-30-28	918	sd. sh. drlg.
Union Oil Co., No. 7 Mountain View, Kern Co.	15-30-28	5,596	P.B. 5,523
Union Oil Co., No. 8 Mountain View, Kern Co.	23-30-28	5,609	completing
General Petroleum, No. 4 Mountain View, Kern Co.	14-30-28	5,628	recmtd. 5,580
Vesta Pet. Co., No. 1 Mountain View, Kern Co.	19-30-29	5,000	O.S. drlg.
Mohawk Oil Co., No. 10 Mountain View, Kern Co.	30-30-29	5,516	cmtd. 5,475
Mohawk Oil Co., No. 11 Mountain View, Kern Co.	30-30-29	4,862	sd. sh. drlg.
Mohawk Oil Co., No. 12 Mountain View, Kern Co.	30-30-29	....	rigging up
Sovereign Oil Co., No. 4 Mountain View, Kern Co.	30-30-29	6,174	cmtd. 6,050
Jergins Trust, No. 6 Mountain View, Kern Co.	30-30-29	5,608	hd. sd. drlg.
Standard Oil Co., No. 7 Mountain View, Kern Co.	13-30-28	5,320	flow 6,844 b.d.
Standard Oil Co., No. 8 Mountain View, Kern Co.	23-30-28	....	rigging up
Standard Oil Co., No. 9 Mountain View, Kern Co.	24-30-28	....	bldg. rig
Star Petroleum Co., No. 1 Mountain View, Kern Co.	23-30-28	5,516	suspended
Ohio Oil Co., No. 1 Mountain View, Kern Co.	33-30-29	5,999	suspended
Ohio Oil Co., No. 2 Mountain View, Kern Co.	33-30-29	5,686	sd. sh. drlg.
Mountain View Oil Co., No. 1 Mountain View, Kern Co.	25-30-28	5,650	fish D.P.
Jergins Trust, No. 6 Edison, Kern Co.	24-30-29	1,315	suspended
Jergins Trust, No. 7 Edison, Kern Co.	13-30-29	1,285	pump 314 b.d.
Jergins Trust, No. 8 Edison, Kern Co.	24-30-29	1,186	sd. sh. drlg.
Ellithorpe, R. E., No. 1 Edison, Kern Co.	18-30-30	421	sd. sh. drlg.
Shell Oil Co., No. 8 Edison, Kern Co.	14-30-29	1,392	rd. sd. drlg.
Sunday, G. M., No. 1 Edison, Kern Co.	5-30-30	132	sd. drlg.
Nelco Oil Co., No. 1 Edison, Kern Co.	5-30-29	3,275	sd. sh. drlg.
General Pet., No. 5 Edison, Kern Co.	15-30-29	3,753	P.B. 3,460
General Pet., No. 6 Edison, Kern Co.	24-30-29	....	bldg. rig
Appling, C. E., No. 1 Edison, Kern Co.	4-30-29	3,587	hd. sd. drlg.
Berry Oil Co., No. 1 Edison, Kern Co.	16-30-29	....	rigging up
Goldman, Frank, No. 1 Edison, Kern Co.	30-29-30	693	dry; abd.
Woodward Oil Co., No. 3 Edison, Kern Co.	36-29-29	685	suspended
Woodward Oil Co., No. 4 Edison, Kern Co.	36-29-29	480	O.S. drlg.
Woodward Oil Co., No. 5 Edison, Kern Co.	36-29-29	884	sd. sh. drlg.
Lucas, Don, No. 1 Edison, Kern Co.	26-29-29	551	sd. sh. drlg.
General Pet., No. 1 Arvin, Kern Co.	1-32-29	5,186	hd. sh. drlg.
Hall-Baker Co., No. 1 Arvin, Kern Co.	16-31-30	1,250	pump water
Hall-Baker Co., No. 3 Arvin, Kern Co.	21-31-30	991	sd. sh. drlg.
Hutcheson & Osborne, No. 1 Arvin, Kern Co.	32-30-30	209	sd. sh. drlg.
Sea Cliff Oil Co., No. 1 Greenfield, Kern Co.	7-31-28	6,765	suspended
Fullerton Oil Co., No. 1 Semi-Tropic, Kern Co.	1-27-22	2,391	gas; shut in
Fullerton Oil Co., No. 2 Semi-Tropic, Kern Co.	14-27-22	2,463	gas; shut in
Fullerton Oil Co., No. 3 Semi-Tropic, Kern Co.	9-27-22	2,960	sd. sh. drlg.
Fullerton Oil Co., No. 4 Semi-Tropic, Kern Co.	26-27-22	2,390	prod. test
Fullerton Oil Co., No. 5 Semi-Tropic, Kern Co.	8-27-22	....	bldg. rig
Fullerton Oil Co., No. 6 Semi-Tropic, Kern Co.	26-27-22	....	bldg. rig
Standard Oil Co., No. 2 Semi-Tropic, Kern Co.	5-27-22	3,562	sd. sh. drlg.
Standard Oil Co., No. 3 Semi-Tropic, Kern Co.	7-27-22	2,343	cleaning out
Standard Oil Co., No. 4 Semi-Tropic, Kern Co.	9-27-22	1,298	sd. sh. drlg.
Standard Oil Co., No. 5 Semi-Tropic, Kern Co.	9-27-22	....	rigging up
Standard Oil Co., No. 6 Semi-Tropic, Kern Co.	8-27-22	....	rigging up
Standard Oil Co., No. 7 Semi-Tropic, Kern Co.	1-27-22	....	bldg. rig
Standard Oil Co., No. 8 Semi-Tropic, Kern Co.	12-27-22	....	bldg. rig
Standard Oil Co., No. 9 Semi-Tropic, Kern Co.	1-27-22	....	bldg. rig
Milham Expl. Co., No. 1 Semi-Tropic, Kern Co.	15-27-23	1,380	sd. sh. drlg.
Shell Oil Co., No. 1 Buena Vista, Kern Co.	9-32-25	7,073	sd. sh. drlg.
Seeple, J. O., No. 1 Elk Hills, Kern Co.	5-30-24	3,850	deepening
Bender, E. L., No. 1 Tembior, Kern Co.	2-29-20	975	cmtd. 740
Reserve Oil & Gas Co., No. 1 Tejon, Kern Co.	2-10-19	2,699	test W.S.O.
Reserve Oil & Gas Co., No. 3 Tejon, Kern Co.	12-10-19	510	sd. sh. drlg.
Silver Gate Oil Co., No. 1 Tejon, Kern Co.	7-10-19	920	sd. sh. drlg.
Taft Well Drlg. Co., No. 1 Kreyenhagen, Fresno Co.	33-22-16	2,521	sd. sh. drlg.
Standard Oil Co., No. 1 Coalinga, Fresno Co.	13-20-14	667	rig to pump
Wellington Oil Co., No. 1 Coalinga, Fresno Co.	14-20-14	1,170	hd. sd. drlg.
Union Oil Co., No. 1 Lillis-Kettleman, Fresno Co.	24-21-16	10,944	fish D.P.
K. N. D. A., No. 56 Kettleman, Kings Co.	8-22-18	10,249	reaming
Standard, No. 2 Kettleman Middle, Kings Co.	29-23-19	6,882	br. sh. drlg.
Continental Oil Co., No. 1 Kettleman-South, Kern Co.	7-25-20	6,903	flow S.W.
Farrel Pet., Well No. 1, San Luis Obispo Co.	18-31-12	1,672	sd. sh. drlg.
Willett Oil Co., No. 1 Cholame, San Luis Obispo Co.	10-25-15	3,687	suspended
Kings River Oil Pool, Well No. 1, Tulare Co.	29-16-23	4,363	hd. sd. drlg.
Schuster, C. R., No. 1 Tulare, Tulare Co.	27-22-23	....	rig suspended
Commonwealth Consd. Gas, No. 1 Tulare Lake, Kings Co.	21-22-20	2,490	gas well
Commonwealth Consd. Gas, No. 2 Tulare Lake, Kings Co.	21-22-20	710	sd. sh. drlg.
Amerada Pet., No. 1 F. L. D., San Joaquin Co.	15- 2-5	5,696	hd. sh. drlg.
Pure Oil Co., No. 1 Chowchilla, Madera Co.	7-10-14	3,403	gas well; idle
Northern Counties Pet., No. 1 Tehama, Tehama Co.	25-24-3	4,363	hd. sh. drlg.
Texas Co., No. 1 Petrolia, Humboldt Co.	1- 3-2	6,133	P.B. 5,800
Shell Oil Co., No. 1 Branch, Monterey Co.	34-24-10	2,950	sd. sh. drlg.
Trico Oil & Gas Co., No. 1 Noonan, Solano Co.	10- 5-1	731	sd. sh. drlg.

TECHNICAL QUESTIONS ANSWERED

By Charles K. Francis, Ph. D., Technical Editor

This department of The Oil and Gas Journal is devoted to the manufacturing branches of the oil industry.

Those connected with the refining of crude petroleum, the manufacture of natural gasoline and closely allied industries are invited to sumbit their problems to Dr. C. K. Francis, technical editor. The department was created for the purpose of aiding managers, superintendents, engineers, chemists and all those engaged in the various phases of plant operation; also those connected with marketing and utilization of petroleum products.

Questions should be submitted in as much detail as possible.

Inquiries must be signed but only the given initials will be printed. The source of the question is considered to be confidential.

Questions requiring a discussion of patents, the use of intricate formulas, extended computations, or cost estimates cannot be considered.

When the matter is of general interest the reply will be published within a reasonable time.

Film Strength Alone Unreliable For Grading Lubricating Oils

As a user of considerable quantities of both Diesel and lubricating oils we are increasingly solicited by sales engineers with various types of friction machines for demonstrating the film strength of lubricating oil. Generally speaking these men represent small unheard-of compounding companies. How important is the characteristic of film strength of lubricating oil?—G. G. K.

There has been a very serious effort made by numerous investigators to show the real nature of lubricating oil films, in relation to the lubrication of metallic surfaces. Viscosity has been found to have a broad relation to surface tension but the differences in surface tension exhibited by oils of varying viscosities have not been found to be large enough to establish anything definite. Just what makes an oil form a film between two surfaces has not been satisfactorily established.

Thomsen, states in Practice of Lubrication, page 62:

"There can be no doubt that the surface tension of an oil has some influence on the condition and strength of thin oil films in contact with metallic surfaces. Lubricating oils wet metallic surfaces, as their surface tensions are lower than those of metals. Differences in surface tension as between various lubricants will therefore mean different behavior as to their tendency to wet metallic surfaces, but the exact nature and importance of surface tension in connection with lubrication is still a practically unexplored subject."

When an inspection is to be made of an oil to ascertain its quality, the information can be obtained only after making an extensive examination. One or two tests alone cannot be expected to furnish enough information to enable one to arrive at a conclusion covering the real quality of a lubricating oil. There are substances, such as sugar solutions, that will show higher viscosities and stronger films than petroleum oils, but they have practically no value as lubricants.

Some years ago Doctor Herschel, of the U. S. Bureau of Standards, directed attention to the fact that lubricating oils, as derived from petroleum, did not wear out. They do not break down or decompose like leather or a piece of iron. They do become contaminated. The refiner's effort is always directed toward manufacturing lubricating oils of the highest purity and the better known grades of oil can be depended upon to satisfactorily do the work for which they are intended. Such oils are not sold on one property but it is the uniform purity, and meeting the specifications of the Federal Government, and those of the technical societies, that may be considered indications of high quality.

Spraying Land With Oil Causes No Permanent Injury

What effect does petroleum have on soil and vegetation, and can land be reclaimed for growing crops after it has had oil upon it?—C. H. B.

Experience teaches that a temporary spraying or even flooding, of land with oil does not permanently injure soil for agricultural purposes. Such lands are soon reclaimed and in many instances the fertility has been shown to be improved. There is ample evidence of this in every oil field from the early days of the industry in Pennsylvania to the pools that have been opened during the past 10 years. The development in Pennsylvania in the early sixties, around what was known as Pithole City, resulted with much of the land being drenched with oil. This same land was returned to farming and many crops have been harvested from soil that had been soaked with oil. In fact today land that was once an oil field with many slush ponds and oily spots, is now covered with normal plant growth.

Petroleum oils are extensively applied in agriculture as sprays for the purpose of protecting trees, plants, and growing crops from the ravages of fungus and insects. These oils are powerful insecticides and repellents. The soil about the trees, for example, has been frequently observed to be more productive than the surrounding area that had not received any oil.

Oil does not penetrate into the soil to the same extent that water does. The oil, having a tendency to cling to the soil particles, remains near the surface; then, as the water level rises during a heavy rain, the oil floating on the water is soon washed away. Chemical reactions and bacterial activity, together with the usual tillage, act to soon reclaim a soil that has been temporarily covered with oil.

Whether a soil is fertile, or possibly permanently injured by the deposition of some objectionable substance, is susceptible of proof. The composition of a soil may be ascertained by means of chemical and physical analyses and plant tests, then compared with normal standard soils of the same type. Many chemists and agronomists are engaged each day throughout the world making such examinations. They are essential for the purpose of selecting soils to permit proper modifications to meet the needs of the crops. Sometimes the chemical composition of soils must be changed and at others the physical condition requires to be adjusted. These principles are well known to the modern farmer and are in fact the very foundation to scientific agriculture.

If some foreign material should be deposited on land, which, regardless of temperature, rainfall and tillage or other conditions, results to permanently impair the productivity, it may be detected with certainty by making the proper scientific tests.

So far as the recognized authorities show, as represented in the literature available, there is not a single instance of a tract of land being permanently injured because of oil having once been on the soil.

Vapor Lock Caused by Gasoline Having High Volatility

What is the most common cause of vapor lock in a motor vehicle? At what vapor pressure should a motor fuel give satisfactory performance during the summer months?—A. A. S.

Vapor lock, or as it is frequently called, gas lock, is a condition involving partial or complete stoppage of the flow of gasoline in the fuel feed system of an internal combustion engine, such as is used for automobiles and aircraft, because of the formation of a relatively large volume of gas. This gas operates to shut off the supply of liquid due to the fact that it occupies the space that otherwise would be filled with the fuel. It has been explained that vapor lock is the result of a preheating of the gasoline, before delivery to the cylinders, to a temperature approximating the 10 per cent point as determined by the A.S.T.M. distillation method, including the correction for loss.

The evidence of a vapor lock condition may appear to the motorist in four forms. (1) Failure of the engine to idle after running at high speed when the atmospheric temperature is high or in traffic. (2) Uneven running of the engine during acceleration. (3) Intermittent operation, or jumping, at high speed. (4) Complete stopping of the engine.

The boiling of the gasoline within the fuel feed system must depend upon the heat from the engine, excepting the rare instances of abnormal atmospheric temperatures, so that the position of the fuel system with respect to the engine walls and the design of the system itself are factors that have much to do with the preheating of the fuel.

The 10 per cent point of the distillation test, as an indication of the temperature at which vapor locking may be expected, and the pressure found by the Reid vapor pressure test, furnish information for eliminating many gasolines of high vapor lock tendencies. If the 10 per cent point is not much below 150° F. and the vapor pressure between 6.5 and 12 pounds, which are the requirements of commercial specifications, it is generally thought that vapor lock could be eliminated.

Accepting 8 pounds vapor pressure at sea level as satisfactory during the summer season, the vapor locking temperature is 132° F. This temperature is reduced 2.4 for each 1,000 feet increase in altitude.

The federal specification for U. S. Government Motor gasoline contains this stipulation for vapor pressure.

"The vapor pressure at 100° F. shall not exceed 12 pounds per square inch.

"The Government reserves the right to reject material (a) in those localities where the normal mean minimum temperature during the month of January is greater than 27° F. if the vapor pressure at 100° F. exceeds 10 pounds per square inch; (b) during the months of June, July, August and September if the vapor pressure at 100° F. exceeds 8 pounds per square inch."

Important Hydrocarbons Found in Gasolines

Will you kindly supply us with a list of the hydrocarbons present in gasoline? If you will mention the boiling points of each, it will be of assistance.—A. P. S.

A large number of different hydrocarbons have been found in various samples of gasoline. The kind of hydrocarbons that may be present depends upon the character of the crude oil refined and the degree of cracking. The source of the gasolines made today is crude oil, cracked and natural gasoline. The lightest compounds that influence the initial boiling point of the larger part of the gasoline marketed originate in the natural gasoline and cracked product.

The hydrocarbons listed in the table have been reported as present in or derived from gasoline. Numerous isomers and derivatives are known.

CARBON COMPOUNDS FOUND IN GASOLINES

Substance—	Boiling point, °F.	A.P.I. gravity
PARAFFINS		
Propane	—44	146
Butane	31	110
Pentane	97	93
Hexane	156	82
Heptane	209	74
Octane	258	65
Nonane	302	59
Decane	343	57
Undecane	383	54
OLEFINS		
Amylene	95	80
Hexylene	154	76
Heptylene	208	70
Octylene	255	64
Nonylene	307	59
Decylene	342	54
Undecylene	383	51
Dodecylene	412	46
DIOLEFINS		
Isoprene	93	75
Trimethyl butadiene	198	64
AROMATICS		
Benzene	176	30
Toluene	231	33
Xylene	292	29
NAPHTHENES		
Cyclopentane	129	70
Methyl cyclohexane	108	57
Cyclohexane	245	50

The constants are shown in the table without decimals, the tenths being carried to the nearest whole number.

The list is by no means complete and is simply intended to serve as an illustration. The recently reported work of Frederick D. Rossini records that they have isolated and identified 35 hydrocarbons; 6 others have been detected and 20 additional compounds are suspected to be present in significant quantities.

For an extended list of possible hydrocarbons see Day's Handbook of The Petroleum Industry, Vol. 1, page 460. Consult the paper Chemical Constitution of the Gasoline Fraction of Petroleum, by F. D. Rossini, Amer. Pet. Inst., Tulsa, May 15, 1935, reported in The Oil and Gas Journal, May 16, 1935, page 61.

PERSONAL PARAGRAPHS

W. P. Z. GERMAN, chief counsel, Skelly Oil Company, Tulsa, made a quick trip to Chicago this week on company business.

* * *

HERBERT F. BEARDMORE, petroleum engineer, has been made district engineer for the Seminole fields operations of the Amerada Petroleum Corporation.

* * *

JAMES WOOD, Long Beach, Calif., operator, addressed operators at an open meeting at Long Beach a few days ago and discussed legislation introduced at the last session of the California legislature and its future importance.

* * *

F. M. FLETCHER has been appointed district sales manager of the Standard Oil Company of New Jersey with headquarters at Asheville, N. C. Formerly he was in charge of the Standard's marketing operations at Durham, N. C.

* * *

RALPH J. REED, member of the American Society of Civil Engineers and American Society of Mechanical Engineers, American Petroleum Institute and other kindred organizations, has moved to the Edison Building in Los Angeles, Calif.

* * *

MAURICE R. BRIDEMAN, acting representative of the Anglo-Persian Oil Company, Ltd., in the United States with headquarters in New York City, sailed on the Normandie of the French line, Saturday. He will remain in Europe during the summer months.

* * *

S. C. GIESEY, in the land and geological department of the Stanolind Oil & Gas Company, has been transferred from Shawnee, Okla., to Midland, Tex.

* * *

RICHARD T. LYONS, vice president, and JOE MORERO, chief geologist, both with the Skelly Oil Company, Tulsa, have completed a business trip to West Texas.

* * *

D. F. AXELSON, vice president of the Axelson Manufacturing Company, Los Angeles, Calif., has returned to his headquarters after a three weeks' business stay in Texas.

* * *

CLAUDE E. AIKMAN, vice president of the Cardinal Oil Company, San Angelo, Tex., has been appointed a lieutenant colonel on GOVERNOR JAMES V. ALLRED'S personal staff.

* * *

H. T. MORLEY, chief geologist of the Stanolind Oil & Gas Company, Tulsa, has returned to his headquarters after a business trip to the division offices of the company at Fort Worth, Tex., and the district office at Midland, Tex.

* * *

MISS NOVADEAN CARPENTER, formerly at Midland, Tex., for the Stanolind Oil & Gas Company, has been transferred to Houston, Tex., as secretary to R. G. BECHTEL, division production superintendent in the Gulf Coast division of the company.

* * *

H. B. MAY, formerly president and manager of the Arrow Refining & Producing Company, Overton, Tex., recently purchased by the Gilliland Refining Company of Gladewater, has been elected vice president of the latter company and is in charge of the purchased plant.

DR. E. J. LEHNER has resigned as chief geologist of the Trinidad Leaseholds, Ltd., and will return to England.

* * *

W. W. HOLMES, of the Texas Company, has been spending the past week in Los Angeles, Calif., combining business with pleasure.

* * *

FORREST M. TOWL, chairman of the board of the Southern Group of Pipe Lines, and dean of the pipe line engineers of this country, was the recipient of a degree of Master of Civil Engineering from his alma mater, Cornell University, at the commencement exercises. Mr. Towl was graduated from Cornell in 1886 with the degree of Bachelor of Science and also holds the degree of Bachelor of Civil Engineering.

* * *

W. B. PYRON, executive vice president of the Gulf Production Company, was guest at a dinner at River Oaks Country Club, Houston, Tex., June 18. Among the officials of Gulf affiliated companies and other Gulf Coast production companies in attendance were: WILLIAM A. SLATER, general manager, Gulf Refining Company; JOHN E. GREEN, general attorney, Gulf Production Company; CHARLES R. STEVENSON, Gulf Refining Company; T. J. SULLIVAN, Gulf Refining Company; GEORGE A. HILL, JR., president, Houston Oil Company; GEN. JACOB F. WOLTERS, Texas Company; and JAMES ANDERSON, vice president, Humble Oil & Refining Company. JOHN E. GREEN, JR., acted as toastmaster.

D. C. SHAFFER, president of the Tennessee Syndicate, Inc., was a recent visitor in New York City.

* * *

J. B. COLLINS, production superintendent for the Shell Petroleum Corporation, and I. V. DAVIDSON with Royal Dutch-Shell at London, England, made an inspection tour of the company's holdings in Coastal Louisiana the past week.

* * *

HARRY KALEY, formerly assistant sales manager of the Ethyl Gasoline Corporation, has been appointed advertising manager of the corporation. He succeeds LUCIEN P. LOCKE who recently resigned after heading the corporation's advertising activities for a period of five years.

* * *

RICHARDSON PRATT, of the Standard Oil Company of New Jersey, was the winner of the Farish Trophy at the annual golf outing of the Jersey Standard Club held last week at St. Andrews Golf Club, Hastings-On-Hudson, N. Y. The trophy was presented by the donor, W. S. FARISH, chairman of the board of the Standard Oil Company (New Jersey).

* * *

MAJ. WALTER R. MACATEE, who has been connected with highway construction for the past 20 years, has been placed in charge of a new field office of the Asphalt Institute at Cincinnati, Ohio. J. E. PENNYBACKER, managing director of the institute, announced that Major Macatee will have charge of a district consisting of Ohio, West Virginia, Kentucky, Indiana, and southern Michigan.

* * *

EDWARD N. CORNING, sales engineer for Everlasting Valve Company, Jersey City, N. J., has recently completed a business trip through the Gulf Coast and Mid-Continent.

* * *

JOHN CUTTER, formerly superintendent of the Producers & Refiners Corporation's plant in West Tulsa, Okla., has moved to Fort Worth, Tex., to join the Sinclair Refining Company there.

* * *

NICK CARTER, of Waurika, Okla., has been assigned to the geological staff of the Gulf Production Company at Midland, Tex. B. G. MARTIN, geologist, has been moved from McElroy, Tex., to Midland.

* * *

C. J. KRUEGEL, in the scouting department for the Shell Petroleum Corporation at Houston, Tex., and MISS FRANCES LAVELLE ISBELL, of Houston, were married June 15 and are honeymooning in and around Dallas, Tex.

* * *

MISS FLORENCE LUNDELL, in charge of Tulsa Public Library Technical Department, left for a month's combined vacation and business trip to Colorado last Saturday. While in Denver, Miss Lundell will attend the annual meeting of the American Library Association.

* * *

WILLIAM A. SLATER, general manager of the Gulf Refining Company, spent the past week at the Port Arthur, Tex., refinery. Leaving the plant at Philadelphia, Pa., on June 14, he went directly to Texas, spending some time at the plants at Fort Worth and Sweetwater and arriving in Port Arthur, June 17. From there he returned to his office in Pittsburgh, Pa.

DO YOU REMEMBER?

From The Oil and Gas Journal Files

25 Years Ago

June 29, 1910

John Cullinan, age 19, and Craig Cullinan, age 17, sons of J. S. Cullinan, president of the Texas Co., are working in the Glenn Pool in Oklahoma. Mr. Cullinan turned the boys over to Superintendent Martin Moran, so they will have an excellent preceptor.

Austin T. Herrick, veteran oil producer and contractor, dies in Bradford, Pa.

Posted price for crude in the Mid-Continent is 38 cents per barrel for oil of 30 gravity and over. Pennsylvania Grade oil sells for $1.30.

20 Years Ago

June 27, 1915

J. B. Faint, oil man, member of the Oil City and Bradford oil exchanges in their palmy days, and a portrait painter in his later years, dies in Oil City, Pa., age 65 years.

Notwithstanding the persistent gloomy stories of water incursion in the Cushing Field it is pouring out 250,000 bbls. of oil per day.

A town lot oil pool in Evans City, Butler County, Pennsylvania, overlooked in 50 years of operating in that county, is causing excitement in that borough of 1,500 people. Thirty wells are drilling on town lots and wells are coming in making from 10 to 20 bbls. per hour initially.

The deepest well in the world is in Upper Silesia in the German empire. It is a diamond drilled hole to test for coal and is bottomed at 7,350 feet. The deepest well in the United States is still drilling at a depth of 7,174 feet. It is located 4 miles northwest of McDonald, Pa.

10 Years Ago

June 27, 1925

Lord Bearstead, founder of the Shell Transport & Trading Co., has been made Viscount Bearstead by King George V for "great public benefactions and political service."

Rainbow Bend, with a production averaging 16,999 bbls., led all Kansas pools in production in May. It is in Cowley County. The most prolific fields in Oklahoma in May were Tonkawa, 62,448 bbls. per day; Burbank, 56,862 bbls.; Cromwell, 40,750 bbls.; the Powell Pool, with 49,676 bbls. per day, was the largest producer in Texas.

Robert Cunningham Pew, age 63 years, one of the organizers and vice president of the Sun Oil Co., dies in Perrysburg, Ohio, on June 26. He was a veteran operator and refiner in the Lima Field.

J. C. Denton, chief counsel for the Mid-Continent Petroleum Corp., has been advanced to vice president. He will continue as chief counsel.

T. A. HALL, chief engineer for the Tide Water Oil Company at Houston, Tex., was a business visitor to the West Texas district, the past week.

* * *

A. L. (BOOTS) FULTON, scout for the Shell Petroleum Corporation, formerly located at Tyler, Tex., has been transferred to Midland in the West Texas district.

* * *

J. C. NEELY, with the Shell Petroleum Corporation, formerly in the Iowa district in Louisiana, has been transferred to the production department with headquarters at Houston, Tex.

* * *

M. (BINK) MANNING, general superintendent for Sterling Oil & Refining Company, Houston, Tex., is the proud father of Sanford Edwin Manning, 6½-pound son, born Friday, June 14.

* * *

R. P. MASE, of Burrell-Mase Engineering Company, has returned to Tulsa after spending several days in Houston, Southwest Texas, and other refining centers, and will soon leave for a week's visit in Chicago.

* * *

C. H. KEPLINGER, petroleum engineer, Shell Petroleum Corporation, Lucien Field, Oklahoma, has just returned to his duties after a two weeks' vacation trip to Mexico City, accompanied by his two brothers.

* * *

L. S. SINCLAIR, comptroller of the Magnolia Petroleum Company and Magnolia Pipe Line Company, Dallas, Tex., has been named assistant to PRESIDENT D. A. LITTLE. The office of vice president and general manager held by the late RALPH KINSLOE has been abolished.

* * *

JAMES J. COSGROVE, of New York, with the Continental Oil Company, spent a few days in Washington, D. C., recently.

* * *

DAN McLEOD, JR., head of the tax department of the Sun Oil Company, Dallas, Tex., with his family, is on vacation in California.

* * *

JOHN LANGSTON, chief scout of the Sun Oil Company, Dallas, Tex., has returned from eastern points where he and his family spent a vacation.

* * *

E. McCUNE, superintendent of the land department for the Sun Oil Company, Dallas, Tex., is taking a motor trip through western states on his vacation.

* * *

D. V. CARTER, head of the petroleum engineering department of the Magnolia Petroleum Company, Dallas, Tex., has returned from a business trip to Kansas.

* * *

W. W. CLAWSON, assistant chief geologist of the Magnolia Petroleum Company, Dallas, Tex., has returned to his headquarters after a trip to Wichita and Lawrence, Kans.

* * *

FRED VAN COVERN, secretary of the Statistical Subcommittee of the Planning and Coordination Committee at Washington, D. C., has been in New York for a few days on business with the American Petroleum Institute.

* * *

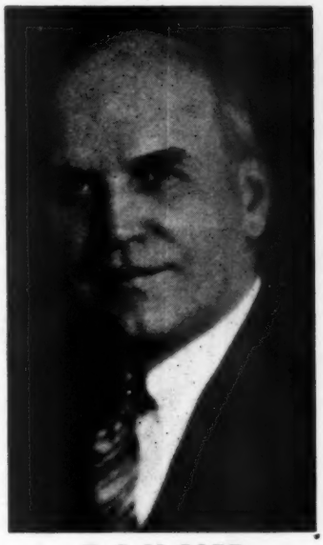
FOREST DORN, of Bradford, Pa., president of the Forest Oil Corporation, and MRS. DORN, sailed Saturday from New York and will visit England and France. They will meet their son, DALE DORN, in London, England.

* * *

GUY M. CHAPPMAN, former Stanolind Oil & Gas Company geologist, and recently vice president and geologist of the McClanahan Oil Company, of Mount Pleasant, Mich., has resigned and established independent offices in Mount Pleasant. He has been operating in Michigan for about five years.

Installed New Accounting System

The modern accounting system now in use by all the European offices of the Standard Oil Company (New Jersey) was put into operation by T. C. McCobb, recently elected to the board of directors of that organization. Mr. McCobb entered the oil business 33 years ago when he got a modest job in the works of the Atlantic Refining Company, Franklin, Pa., at that time one of the underlying companies of the New Jersey Standard. He made steady progress and shortly after the Atlantic was separated from the Standard, along with 32 other companies by the court's dissolution decree in 1912, he entered the service of what had been the parent organization. In 1915 Mr. McCobb was transferred to the International Petroleum Company, Ltd., a Standard subsidiary, in Toronto, Canada, and while connected with that company he visited its properties in Peru, South America.



T. C. McCOBB

After two years with International Mr. McCobb was shifted to another Standard subsidiary, Imperial Oil, Ltd., at Sarnia, Ontario. He remained with that organization five years, in the meantime being made secretary-treasurer, and when he severed his connection with Imperial in 1928 it was to go to the New York office of the Standard Oil Company (New Jersey) as assistant comptroller. In June, 1933, he was advanced to comptroller. In the two years during which he has filled that position Mr. McCobb has made a tour of all the Standard's offices in Europe, revising their accounting methods and bringing them up to a high state of efficiency.

JOE WILSON, chief geologist for the Simms Oil Company at Dallas, Tex., was a business visitor to Houston, Tex., the past week.

* * *

EUGENE BEYETEE, in the rental department of the Sun Oil Company, Dallas, Tex., with his family, is on vacation in California.

* * *

W. R. BOYD, executive vice president of the American Petroleum Institute, spent a couple of days in Washington, D. C., on business for the Institute.

* * *

ELMER SWANSON, head of the Swanson Oil Company, independent operator in the new Crystal Field in Central Michigan, has been seriously ill in Mount Pleasant, Mich.

* * *

JOSEPH E. MOORHEAD, executive secretary of the Pennsylvania Grade Crude Oil Association, spent several days in Washington, D. C., on business for the association.

* * *

J. E. ECKEL, petroleum engineer for Humble Oil & Refining Company, with headquarters at Houston, Tex., was married June 16 to MISS DOROTHY GUYOTT, of Douglass, Kans.

* * *

J. A. McNALLY, acting secretary of the Marketing Subcommittee of the Planning and Coordination Committee at Washington, D. C., was in New York for several days on personal business.

* * *

S. W. WALLACE, superintendent of the Texas Company refinery at Port Arthur, Tex., is motoring north on a two weeks' vacation trip. He plans to return about the middle of this week.

* * *

ROY W. MUNCY, of the Union Oil Company, is receiving the congratulations of his fellow employes at the Wilmington, Calif., refinery because of his presence of mind and heroism in dashing through a gasoline fire to shut off the valves feeding the flames which cost L. C. DONKERSLEY his life. Mr. Muncy was painfully burned.

E. H. SALRIN, first vice president of the Tide Water Oil Company at Houston, Tex., is on a business trip to New York.

* * *

MISS THEO GREWER, of Vancouver, British Columbia, has left for Waterton Lakes Park, Alberta, to take charge of drilling operations for Oil City Royalties, Ltd.

* * *

W. S. PATE, recently of the Marathon Oil Company in West Texas, has been employed by the Sher-Ritt Oil Company as production superintendent in charge of production and operation.

* * *

L. L. RECTOR, Fort Worth, Tex., head of the Rector Well Equipment Company, Inc., is spending some time in Colorado and Wyoming on business, his family accompanying him as far as Denver, Colo.

* * *

C. E. CLASON, formerly district manager for Dowell Incorporated in Kansas, is now in charge of all acidizing work for the Halliburton Oil Well Cementing Company, and will be located at Wichita and Hutchinson, Kans.

* * *

G. H. WILLIAMSON, head of the violations department of the East Texas division of the State Railroad Commission, Kilgore, has been admitted to practice law in the Federal District Court by FEDERAL JUDGE RANDOLPH BRYANT.

* * *

E. M. CRAIG, president of Mar Jon Oil Company, of Vancouver, British Columbia, and CONRAD W. JOHNSON, of Seattle, Wash., visited Calgary and other Alberta points recently in connection with drilling operations on the Watson structure.

* * *

MR. and MRS. GEORGE L. BOND, of Crafton, Pa., have been visiting their son, REED W. BOND, of the Shell Petroleum Corporation, Tulsa.

* * *

MR. and MRS. E. P. ROWE, of Toronto, arrived in Chatham, Ontario, recently where Mr. Rowe is supervising drilling operations in the Dover gas field.

* * *

ROSS McCOLLUM, president of the National Oil Company of California, was re-elected at the annual meeting of the company held in Los Angeles, Calif., recently.

* * *

B. A. HOLLEMAN, assistant advertising manager for the Shell Petroleum Corporation at St. Louis, Mo., was a business visitor to the company's district offices in Louisiana the past week.

* * *

LES STEGALL, in the crude oil purchasing department of the Shell Petroleum Corporation, has been transferred back to Tyler, Tex., from Houston. Mr. Stegall formerly scouted the East Texas Field and had headquarters at Tyler before moving to Houston.

* * *

BAIRD H. MARKHAM, director of the American Petroleum Institute Industries Committee, was in Washington, D. C., during the Congressional fight on the extension of the federal gasoline tax. General Markham personally directed the fight which resulted in a continuance for one year, instead of two, of the tax.

* * *

A. I. LEVORSEN, chief geologist for the Tide Water Oil Company, with headquarters at Houston, Tex., has resigned and will devote his time to personal business. Mr. Levorsen was elected president of the American Association of Petroleum Geologists at the March meeting. He was at one time chief geologist for the Independent Oil & Gas Company at Tulsa, and was later research geologist for the Phillips Petroleum Company at Bartlesville, Okla. His resignation was effective June 15 and he and his family will move back to Tulsa.

New compressor station of Southern Natural Gas Corporation at Perryville, Louisiana

again SIMPLICITY *was the decision*

● Again it is proved that the fewer working parts and simplicity of Westcott orifice meters are a real guarantee of accuracy and low maintenance cost. ● In selecting meters for their new station Southern Natural Gas Corporation chose Westcott meters on the basis also of past experience with a large number of these instruments. ● This station employs 28 Westcott meters on 14 runs. The capacity of the installation is approximately 325 million cu. ft. per day at existing field pressures. ● Setting the master and check meters facing each other to make comparison convenient and gage lines uniform are especially noteworthy features in the design of the station. ● The same degree of accuracy—and low operating cost—are equally as important in all installations where gas, oil, steam or liquids are measured. The new Catalog EG2 giving complete data is just off press! . . . and will be mailed on request.

AMERICAN METER COMPANY
INCORPORATED
The World's Largest Manufacturers of Gas Meters and Allied Apparatus
Established 1836

METRIC METAL WORKS • ERIE, PENNSYLVANIA

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NATURAL GAS DEVELOPMENTS

Surplus Gas in Summer Stored in Depeleted Field

CISCO, Tex., June 24.—Use of a partially depleted gas field as a storage reservoir for surplus casinghead gas in the West Texas Field that cannot be marketed during the summer drop in demand, undertaken by the Lone Star Gas Co. in a conservation program including four West Texas counties, Frank L. Chase, vice president and operating manager, said is the first project of this nature ever undertaken in the Southwest.

Compressor, pipe line and reservoir facilities have been made available to casinghead plant operators in Eastland, Stephens, Shackelford and Young Counties by the company. Excess casinghead residue gas from the plants is being taken into Lone Star pipe lines and a like amount taken out of the lines at Cheaney Field, Eastland County, and compressed to a pressure sufficiently above well pressure to force the gas down into depleted sands through wells that have ceased practical production. The excess gas will remain in the natural storage reservoir until increased demand during cold weather will make its use possible.

The project is expected to result in increased revenue of more than $100,000 to casinghead plant operators, producers and royalty owners who are co-operating with the program enthusiastically, seeing in it a market for gas which would otherwise be lost during summer months.

Facilities now available have a daily capacity of 10,000,000 feet and the total storage capacity of Cheaney Field with present facilities is approximately 2,000,000,000 feet. Slightly more than 15,000,000,000 feet of gas have been taken from this field and the pressure has dropped from 1,230 to 140 pounds.

Carbon Black Revival Reported in North Texas

FORT WORTH, Tex., June 24.—The manufacture of carbon black was formerly a big business in the Ranger district, especially in Stephens and Eastland Counties, but during the past few years the demand fell to such low level that large stores were built up at the plants in Texas, the Panhandle district becoming the greatest carbon black center in the country. Now the demand for the product has reached such proportions that the manufacture in the Ranger district does not meet the demand and stores have been drawn upon to fill orders. The commodity brings 4 cents per pound for domestic and export trade. Plants in the Ranger district obtained 2.4 pounds per 1,000 feet of gas, and 225,000 pounds were shipped out of the district in May where only 206,000 pounds were made up in the district in that period. Many of the plants have been dismantled, some having been moved to the Panhandle where operators have been using them to advantage.

TEXAS GAS PRORATION

AUSTIN, Tex., June 24. — Chairman Ernest O. Thompson, of the Railroad Commission, announced that no gas proration order will be issued until July. It will become effective August 1, the date the new gas control law is operative.

CANADIAN WESTERN EXTENSION

CALGARY, Alberta, June 22. — The Canadian Western Natural Gas, Light, Heat & Power Co. is extending its local transmission lines about 2½ miles to serve a relief settlement near Ogden.

Manufacture of Carbon Black

By R. G. ALLEN[1], H. W. PRICE and E. B. REINBOLD[2]

By far the largest quantity of carbon black is manufactured by what we term the channel process. It is so-called from the fact that the gas, when burned from various types of lava tips, is projected against the underside of standard steel channels, either of 7 or 8-inch widths, where the black is collected. These channels, within the burning houses, commonly called hot-houses, are bolted together, forming a grid, with the channel edges turned up and these are suspended by means of cross channels or angles across the ends of which are bolted or welded two angles, serving as the support of flanged wheels which run on a track and support this channel grid. The channel grid is then moved longitudinally in the hot-house a distance of from 4 to 8 feet, above the gas flames, which are stationary, and in the process of this reciprocating motion, hoppers and scrapers are so placed that the scrapers remove the surface deposit allowing it to fall within the hopper, and then by means of a screw conveyor it is automatically and continuously removed from the hot-houses into a central alley where it is again picked up by a larger conveyor and conveyed to the bolting and packing house.

Within the hot-house and located between each collecting hopper and burner pipes, usually 1 or 1¼-inch, which lie approximately 2½ inches below the channels and parallel to them and have placed in this burner pipe, at a distance of approximately every 4 inches, an old-fashioned lava burner tip, from which the gas issues and burns in a lazy flame and in an atmosphere of insufficient oxygen to form complete combustion.

For convenience of operation hot-houses are placed in two rows with a space of from 15 to 20 feet wide between them called an alley. This alley contains the two collecting tubes for conveying the black to the packing house, also contains the drives necessary for the hot-house conveyor screws, also the drives to operate racks and pinions which cause the channels to move back and forth within the hot-houses. A few years ago a factory consisted of 20 houses, but in the last five years these have been stepped up to as many as 60 hot-houses per unit, and with some factories several units combined conveying into one packing house.

Other Types

As another form of channel factory we might list the disc or wheel type plant which is now almost obsolete, but there are still some in operation. This type of plant is similar to the channel in all respects except that the black is deposited on a circular disc 36 to 40 inches outside diameter and 6 to 8 inches wide, and operates slowly in one direction. The discs are arranged in the hot-houses in two or four rows and have the advantage of necessitating only one scraper per disc and a much smaller hopper. However, the complication of driving the discs in the intense heat, coupled with small capacity for the size of the hot-houses, are the principal drawbacks.

A third type of factory is that in which round rollers are used on which the black is deposited and from which it is scraped, every roller usually being put above or in one enclosing hopper. Each hot-house then contains a series of these roller combinations which are usually about 12 inches in diameter and 4 to 6 feet long, and have one or two rows of tips underneath them. The black produced in this type of factory has several peculiar characteristics, for which the demand is limited.

In addition to the three types of factories just mentioned there are four other types, namely, restricted combustion, continuous cracking, batch cracking and electrical cracking. The restricted combustion type operates by burning gas with an insufficient amount of air in a large furnace, usually about 12 feet in diameter and 20 feet high. The smoke from this furnace is then collected by means of either bag filtration or is thrown down by means of water sprays, the slug of which is then filter pressed, dried in an indirect rotary drier and broken down by grinding.

In continuous cracking raw gas is cracked by means of being subjected to reflected heat or by being passed over continuous flames without the addition of any air.

The batch cracking is that of heating up a checker work brick furnace by means of burning gas underneath the bricks until a temperature of about 2,300° F. is reached, then raw gas is admitted at the top, allowed to flow down over the heated brick-work, wherein the gas is cracked, producing hydrogen and carbon.

The electrical cracking method, which is yet in the experimental stages, has successfully cracked gas, but more successfully cracked oil, in the vapor or liquid state. If oil is used this is thrown down as a slug and must be filtered, pressed out of the oil, dried and ground.

The black made under these four last processes has characteristics peculiar to each method, but is not commercially in direct competition with the more common channel black.

Construction of Plants

The materials of construction of practically all of the plants are derived from standard steel shapes, standard channels being used for the collecting surfaces and angles or channels used for supporting this collecting grid. The framework of the hot-houses is made out of material with 1, 1½ or 2-inch standard angles, this framework then being covered with standard, painted, V-crimped sheet iron. The piping used is generally that of plain steel pipe. With the exception of where hydrogen sulphide is encountered considerable success has been had in the use of calorized pipe especially for burner pipe in which the tips are located.

It has been the custom of various manufacturers to fabricate and erect their own factories and up to the present time there has been no design that could be said to be standardized, as each manufacturer has varied considerably, except all plants are basically the same in principle. It was the custom, originally, to fabricate and erect entire factories by means of bolts and rivets, but many of the later factories are completely welded, mostly by means of the electric arc.

In all of this construction considerable attention must be given to providing for expansion joints, as the temperature within the hot-houses is usually around 400° F. at the floor, approximately 1,000° F. around the channel grid and from 400 to 500° F. at the roof outlets. There have been many different plans used for drafting the factories to control the limited supply of air uniformly throughout the houses; some excess air must be provided to keep the temperature within operating limits.

Gas Distribution

The gas distribution to provide each burner tip with a uniform pressure over a factory covering several acres presents an interesting problem and in general is handled in one of two ways. The first method employed was to reduce the field pressure by means of standard, weighted, reducing valves down to 3 or 4 pounds and this was passed into a large bell jar gasometer type regulator, in which the bell floats on water or oil. The floating of the bell was then used to control a butterfly valve, reducing the pressure to 6 or 8 inches of water. This was then distributed to the factory through a loop of 10-inch pipe, joining in several places to a loop of 8-inch pipe going around each group of hot-houses and into this 8-inch pipe were welded 4-inch nipples with 4-inch valves, controlling two runs of 4-inch pipe the full length of each hot-house, which served to distribute the gas to the burners, as well as form the support for the burning channels and operating mechanism. In this final distribution the gas dropped from the gasometer pressure to a pressure of about two-tenths to three-tenths inch of water at the tips.

A second method of distribution is that of running a large gas main down the central alley between the burning houses and controlling the pressure in this line by means of weighted regulators to from 1 to 15 pounds and then by the use of a single 4-inch pipe extending back through the center of the hot-house, controlling the flow to each house by means of an individual flow meter and small riser pipes from this general distributing pipe to each burner section. Each method accomplishes the same results. The former method requiring a much larger investment, while the second method requires more supervision.

Operation and Handling

The operation of the hot-houses is continuous over long periods of time, except when necessary to close down for cleaning and repairing. This is done in individual houses and seldom is a factory down completely.

It may be of interest to many how the lubrication of all the moving parts is provided for, due to the high heats developed and due to much of the exposed machinery. Where the heat is high, that of the burner grid, no lubrication is necessary, as the burner grid support is carried on the axis of a large number of flanged bearing wheels, which themselves run upon a steel track. This gives us rolling friction only, with very little wear resulting. The bearings in the alleys are either plain babbitt or roller type, the plain babbitt type usually lubricated by means of bottle or wick oilers and the roller type by means of compression grease. While carbon black seems to possess little or no lubricating properties,

(Continued on Page 104)

[1]Cabot Companies, Pampa, Tex.
[2]J. M. Huber Corp., Borger, Tex.
Abstract of paper before A.P.I. Division of Production, Amarillo, Tex.
(Authors' title: "The History, Use and Manufacture of Carbon Black.")

UNITED GAS EARNINGS

NEW YORK, June 24.—United Gas Corp. and subsidiaries report for the 12 months ended April 30 net income of $4,410,942, equivalent after dividend requirements on the $7 first preferred stock to $1.42 a share on the $7 second preferred stock. For the preceding 12 months net income was $3,188,167 or 4 cents a share on the second preferred.

MARKET RECORD OF OIL SECURITIES

Active Oil Stocks Listed on New York Stock Exchange

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended June 22 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
70¾	48½	6,400	70	67¾	69	Amerada Corp.	788,675	N.P.	50eQ	4-30-35	$2.00	55⅝	39	47⅝	18½
28	21⅜	10,500	27⅛	25¼	26⅝	Atlantic Refining	2,664,902	$25	25eQ	6-15-35	1.00	35¼	21½	32½	12¾
10⅜	5⅜	6,000	9	8⅜	8¾	Barnsdall Corp. A	2,248,795	$5	....¶	6-30-35	....	10	5⅞	11	3
7¾	3⅜	42,100	7¾	6½	7¾	Columbia Gas & Elec.	11,610,036	N.P.	....	5-15-34	‡ .25	19¼	6⅝	28⅛	9
10½	6½	25,700	9⅛	8¾	9	Consolidated Oil Corp.	13,996,072	N.P.	14c	10-31-34	.42	14¼	7¼	15⅜	5
23	15⅛	18,400	21⅞	20¾	21⅞	Continental Oil of Delaware	4,682,722	$5	12½c	4-30-35	.50	22¾	15¾	19⅝	4⅛
19⅛	11¾	3,000	18	16¾	17½	General Asphalt	387,149	$10	....	6-15-32	....	23½	12	27	4⅜
3⅜	1½	700	2⅜	2⅜	2⅜	Houston Oil (new)	1,098,618	$25	....	10-17-30	....	5⅝	2½	7⅜	1⅛
1⅞	½	8,300	¾	½	½	Louisiana Oil Refining	1,302,158	N.P.	....	.. ..	....	3⅜	⅜	4	⅛
13⅞	9½	3,700	12½	12	12⅝	Mid-Continent Petroleum	1,857,912	$10	15e	5-15-35	.50	14⅜	9⅛	16	3⅜
19	9	1,000	16⅞	16	16	National Supply of Delaware	382,591	$25	....	5-15-31	....	21⅛	10	28⅝	4
14⅛	9¼	11,100	12¾	12	12⅝	Ohio Oil Co.	6,563,107	N.P.	15e	6-15-35	.45	15⅞	8½	17⅝	4⅜
9½	7	200	8	7⅝	7⅝	Pacific Western Oil	1,000,000	N.P.	40e	11-30-34	.40	9⅜	5½	9½	3
1⅜	⅝	600	¾	½	½	Panhandle P. & R.	198,770	N.P.	....	....	....	2½	⅝	4¼	⅜
23	13¾	23,000	22¾	21½	22½	Phillips Petroleum	4,154,687	N.P.	25c	6-1-35	1.00	20¾	13⅜	18¾	4⅜
11⅝	6½	3,100	9⅜	9⅛	9¼	Plymouth Oil Co.	1,014,082	$5	25c	3-30-35	75c & 4% Stk.	16¾	7¼	17⅞	6⅜
9¼	5⅞	86,100	10⅛	8½	9¾	Pure Oil	3,038,370	N.P.	....	9-1-30	....	14⅞	6⅛	15⅝	2½
43¼	29½	1,200	41⅞	40¾	40¾	Royal Dutch N. Y. shares	432,224	$14	$1.35	7-31-34	1.35	39½	28⅝	39¾	17⅝
35⅞	20¾	4,900	31½	29½	30½	Seaboard Oil of Delaware	1,204,460	N.P.	15eQ†	6-15-35	1.00	38⅜	20¾	43⅜	15
11½	5½	17,400	11	10	10½	Shell Union Oil	13,070,625	N.P.	....	6-30-30	....	11½	6	11⅝	4
97	63⅛	1,200	90⅛	88½	89⅝	Shell Union Oil pfd.	400,000	$100	....	7-1-31	....	89	57	61	28½
18¾	13½	4,400	15⅛	14¾	15	Simms Petroleum	461,698	$10	50c	2-1-35	.55	17⅛	7¾	12⅜	4⅛
11⅜	6½	400	10½	10¼	10¼	Skelly Oil	1,008,514	$25	.	12-15-30	....	11½	6	9⅞	3
15⅜	11	54,000	14	13	13⅜	Socony-Vacuum	31,154,379	$25	15eQ	3-15-35	.60	19⅞	12½	17	6
38⅞	27¾	14,600	36⅞	34⅝	36⅞	Standard Oil of California	13,102,900	N.P.	25c	6-15-35	1.00	42⅞	26½	45	19½
27¼	23	10,300	25⅞	25¼	25¾	Standard Oil (Indiana)	15,215,677	$25	25eQ	3-15-35	1.00	32¾	23¼	34	17
32	26½	No sales ..	..	..	..	Standard Oil of Kansas	200,000	$10	50eQ	10-31-34	2.00	41	26	39⅞	12⅜
50½	35¾	30,600	49⅛	46¾	48⅞	Standard Oil of New Jersey	25,856,081	$25	50eSA‖	6-15-35	1.25	50⅛	39¼	47½	22⅜
75½	60½	800	75½	75	75½	Sun Oil	1,733,013	N.P.	25eQ	6-15-35	$1 & 9% Stk.	74¼	51½	59	35
23¾	16½	14,300	21¾	20¼	21¼	Texas Corp.	9,486,417	$25	25eQ	7-1-35	1.00	29⅜	19⅝	30⅛	10⅜
4⅝	3¼	6,500	4⅝	4¼	4⅝	Texas Pacific Coal & Oil	880,703	$10	....	12-31-29	....	6½	2½	6½	1⅜
12	7⅜	9,400	11	10¼	10⅝	Tide Water Associated	5,631,341	N.P.	....	2-16-31	....	14⅜	8	11¾	3⅛
102⅛	84	1,000	100⅛	98⅞	99⅛	Tide Water Associated pfd.	666,524	$100	$3§	7-1-35	§8.50	87	64½	65¼	23½
20¼	14¾	8,600	18⅞	17⅞	18	Union Oil of California	4,386,070	$25	25eQ	5-10-35	1.00	20½	11½	23⅜	8½
26¼	20⅞	1,200	24¾	24	24	Union Tank Car Co.	1,200,000	N.P.	30eQ	6-1-35	1.20	25⅜	15⅝	22¾	10¼
2⅝	1	200	1⅞	1⅞	1⅞	Wilcox Oil & Gas	424,839	$5	....	5-10-28	....	5⅝	2	5½	2

*Ex-dividend. †Plus extras. ‡Payable in preferred stock. §On account of accumulated and current dividends. ‖Dividend 4/75 Mission Corp. paid 3-15-35. ¶Dividend of one-half share Barnsdall Refining Corp.

Active Oil Stocks Listed on New York Curb

Compiled by Carl H. Pforzheimer Co., 25 Broad Street, New York City, Members New York Stock Exchange and New York Curb Exchange

1935 High	1935 Low	Week ended June 22 Sales	High	Low	Close	Stocks—	Total shares outstanding	Par value	Dividend rate	Payable or last paid	Dividends paid in 1934	1934 High	1934 Low	1933 High	1933 Low
39	30½	200	39	39	39	Buckeye Pipe Line Co.	200,000	$50	75eQ	6-15-35	$3.00	38	26	39¾	25
4¼	1⅝	1,400	2⅞	2½	2¾	Carib Syndicate	799,020	25c	....	.....	....	5½	1½	7¾	¼
157	115	No sales ..	..	..	..	Chesebrough Mfg. Co.	120,000	$25	$1Q†	6-28-35	11.50	150	116	129	71
2¼	⅝	24,800	1⅜	1⅜	1⅜	Cities Service	37,804,394	N.P.	....	6-1-32	....	4¼	1¼	6¼	1⅓
1¼	½	2,800	½	½	½	Colon Oil	2,200,000	N.P.	....	.....	....	3¼	½	4	¼
⅞	⅜	200	⅞	⅞	⅞	Cosden Oil	399,687	$1	....	.....	....	3⅞	½	3⅞	1⅜
18⅞	10	13,500	18⅝	17½	18¼	Creole Petroleum	6,974,356	$5	....	.....	....	14⅜	9⅝	12	4⅝
6⅝	4¼	800	6⅜	6¼	6¼	Darby Petroleum	509,696	$5	25c	7-15-35	.50	7½	4⅛	8	2¼
2	¾	No sales ..	..	..	..	Derby Oil & Refining	263,162	N.P.	....	.....	....	2¼	1	2¾	⅞
38	34	No sales ..	..	..	..	Eureka Pipe Line	50,000	$50	$1Q	5-1-35	4.00	37	30	41¾	20
74¾	50¼	4,700	68½	65	66	Gulf Oil Corp.	4,538,101	$25	....	10-1-31	....	76¾	49¾	62	24
64	44	5,500	63⅝	60⅝	62	Humble Oil & Refining (new)	8,923,935	N.P.	25eQ	7-1-35	§1.25	496	33¼	105½	40
22½	15⅝	12,900	21⅛	19⅞	19⅞	Imperial Oil of Canada	26,919,871	N.P.	25eSA†‡	6-1-35	.92½	17⅞	12⅝	15⅞	6½
6	3⅝	1,000	6	5½	5½	Indiana Pipe Line	300,000	$10	15eSA	5-15-35	.35	6⅞	3⅝	8	3⅛
39¾	28	7,600	36	35	35½	International Petroleum	14,247,088	N.P.	75eSA†‡	6-1-35	2.28	33⅜	19⅜	23½	8¾
9½	4⅜	10,100	8	7⅝	7⅞	Louisiana Land & Exp.	3,000,000	N.P.	....	.....	....	5	2⅛	2¼	⅞
6¾	3½	No sales ..	..	..	..	Lion Oil Refining	270,000	N.P.	....	10-27-30	....	6	3⅜	9½	1¼
6¼	4½	1,900	5⅞	5¼	5⅞	Lone Star Gas	5,382,723	N.P.	15c	2-15-35	‖ .16	8⅜	4¼	11⅞	4⅜
5½	4⅛	1,000	5½	5¼	5¼	Mountain Producers	1,682,182	$10	15eQ	7-1-35	.60	5½	4	6½	2½
18⅛	11¾	2,200	18⅜	17½	17½	National Fuel Gas	3,810,183	N.P.	25eQ	7-15-35	1.00	18⅛	13⅛	20	10
9¼	6¾	400	9¼	8¾	9¼	National Transit	509,000	$12.50	40eSA	6-15-35	.75	9½	7	10	5½
2⅝	2	500	2¼	2¼	2¼	New Bradford Oil	1,445,202	$5	10eSA	3-15-35	.20	2½	1⅜	2¼	½
2¼	1	No sales ..	..	..	..	New Mexico and Arizona	1,000,000	$1	....	.....	....	2¾	1	1⅞	⅛
3⅜	3	200	3¾	3⅝	3⅝	New York Transit	100,000	$5	15eSO	4-15-35	.30	4¾	3	4⅞	3
7	5¼	No sales ..	..	..	..	Northern Pipe Line	120,000	$10	25eSA	7-1-35	.50	7	4⅝	6⅛	4¼
2⅛	1¾	11,900	2⅛	1⅞	1⅞	Pantepec Oil	1,608,700	N.P.	....	.....	....	2⅝	⅞	3⅜	⅛
1½	⅝	200	1⅛	1	1⅛	Ryan Consolidated	296,931	N.P.	....	.....	....	3⅜	⅞	4¼	⅝
7½	5½	700	7⅛	6⅞	7⅛	Salt Creek Producers	1,496,859	$10	20eQ	5-1-35	.80	7⅞	5½	9¼	3½
28⅝	21⅝	700	25½	24¾	25½	South Penn Oil	1,200,000	$25	30eQ	6-20-35	1.20	26½	17½	22½	11
4¾	3⅞	100	4½	4½	4½	Southern Pipe Line	100,000	$10	15eSA	3-1-35	.25	5½	3½	6	2⅛
52½	45¼	No sales ..	..	..	..	Southwest Penna. Pipe Lines	35,000	$50	$1Q	7-1-35	5.00	47	41	43	24½
21⅝	18	4,000	21½	20¾	21¼	Standard Oil of Kentucky	2,604,790	$10	25eQ†	3-15-35	1.50	18⅜	14⅝	19¼	8⅝
12	7¾	200	10	9⅞	10	Standard Oil of Nebraska	188,403	$25	....	6-20-34	.50	16⅞	8¼	20½	11
19¾	11½	500	17½	16	16	Standard Oil of Ohio	753,740	$25	....	1-3-33	....	28½	12¼	41	15½
1¼	⅞	6,100	1¼	1⅛	1⅛	Sunray Oil	1,610,810	$1	....	4-15-31	....	2	⅓	1½	⅜
6⅞	5	1,000	5⅞	5⅛	5½	Texon Oil & Land	936,028	N.P.	15eQ	6-29-35	.90	11	4⅜	13¾	6¼

*Ex-dividend. †Plus extras. ‡Payable in Canadian funds. §Includes 50 cents on old $25 par value stock. ‖Payable in preferred stock.

Note—In comparing highs and lows for the several years in the two tables, it will be necessary to take into consideration cases where there have been stock split-ups.

FIELD PROBLEMS FROM READERS

Edited by Thomas F. Smiley

This department is conducted in order that men connected with the drilling, producing and transporting branches of the petroleum industry may obtain aid in solving problems that confront them in their work. Readers are invited to send questions freely. These questions will be placed in the hands of persons capable of answering them authoritatively, and the answers, based on the best available information, will be published.

Each question should give as much detail as possible, especially if it involves depths of sands, types of sands and operations on adjoining or nearby proptries. The source of questions will be considered confidential, and only the initials of the sender will be published. Questions involving patented processes, intricate formulas or estimates of cost cannot be answered. If an immediate answer is important, one will be given by mail when the writer requests it.

In this connection, The Oil and Gas Journal will be glad to publish articles from field men who have devised new methods or improved old ones.

It Is Startling How Many Things Can Figure in a Fishing Job

Your reports on a well in which I am interested say that it has a fishing job and also that it is shut down. Confessing my greenness, I want to ask just what a fishing job is. And when you say a well is shut down do you mean that no more drilling will be done on it?—E. F. N.

In the course of drilling a well with cable tools or by rotary part of the equipment may become lodged in the hole and cannot be withdrawn in the usual manner. It may be a bit, bailer, portion of drillstem or rotary bit, but whatever it is, it presents a problem in recovering it and removing it from the hole, and this operation is termed a "fishing job."

These fishing jobs may take a few hours or they may consume months and require special tools and the exercise of much patience and skill on the part of the drilling crew. Really it is fairly startling how many different kinds of things can happen in a fishing job, as you will come to realize when you are more familiar with the cantankerous possibilities of a drilling project.

When a well is reported shut down because of a fishing job it means that until the obstruction in the hole is removed it is not possible to deepen the hole and therefore the scout's report is not changed as to depth or other conditions. The common practice is simply to report that the well is shut down for a "fishing job" and if the reports are followed it will be found that at some later date they will again give the depth of the hole which indicates that the lost part has been removed or the crew has drilled past it. The other alternative is to report the location as abandoned and rig skidded and new hole started.

Pits for Storing Oil Should Be Used in Emergencies Only

In a recent issue of your magazine you published an article about conditions in East Texas and in it you said there was 2,795,300 bbls. of crude oil in open pits in that field and that there was capacity for storing 7,258,500 bbls. that way. I would like to know whether this is a satisfactory method of storing crude. I would have supposed there was pretty heavy loss through seepage. Isn't there any serious loss that way? And in the case of East Texas crude I would think the loss from evaporation would be considerable. I would like to know just what the advantages and disadvantages of this method of storing crude are.—R.F.E.

There is really only one circumstance that will justify the handling of crude oil such as that produced in East Texas in earthen storage. If a well should come in out of control it is a choice between catching the oil in earthen pits and losing it. They should be regarded as emergency containers only and should be emptied as quickly as possible and the oil stored in steel tanks.

In the East Texas Field the surface is very sandy, and fresh oil will seep into this sand for a considerable distance. If oil has been withdrawn from any well or lease at a higher rate than the one at which offset wells produce their oil, a differential in pressure will be created in the underground reservoir, and this is detrimental because the wells producing at higher than allowable rate are using more than their share of the energy common to the whole pool. They are getting oil to which they are not entitled at the time of its production and are also using more than their share of the natural energy of the pool with which to deliver it to the well and perhaps to the surface.

After oil is in the earthen storage, which is not covered by roof or any type of protective covering, there will be an appreciable loss from evaporation. This loss may be estimated at 6 to 8 per cent, by volume, of the crude oil produced. If there are approximately 2,800,000 bbls. of oil now in open storage pits in East Texas, and it is crude oil direct from the wells, it is safe to estimate that the loss will exceed 175,000 bbls. of the light fractions of this oil.

These light fractions would have been distilled into gasoline and based upon a price of 4½ cents per gallon at the East Texas refinery this portion of the oil that has been lost would have been worth more than $325,000.

If 4 per cent of the oil produced into the pits, or 112,000 bbls., has seeped into the ground, this oil, at $1 a barrel, represents a further loss of $112,000.

Open pits of this kind are a serious fire menace. Many of the pits are near refineries and other buildings, as well as near oil wells. In California many costly fires have occurred in pits of this kind, and also in concrete open storage pits that have been covered with wooden roofs.

Judging from experience there is no justification for using open pits for storage of crude oil except as an emergency measure or even for storing the residues after the gasoline and other light fractions have been removed in the topping plant.

In open pits rain will accumulate and contaminate the oil. To remove this water is a costly operation. If properly done in treating tanks using chemicals the cost of equipment and material is relatively high.

In the Smackover Field, where heavy oil was produced during the boom days, large quantities were stored in earthen pits and later sold as fuel oil. To prepare this oil for sale it was a common custom to heat the mixture in open vats and much of the water was actually boiled off with heavy loss of light fractions. When it is remembered that East Texas crude will fractionate at temperatures below 150° F. it is easy to anticipate heavy losses of crude oil stored in earthen pits when it becomes necessary to prepare this oil for market, even if it is to be sold as fuel oil.

There is no true advantage in storing oil in earthen pits if produced from wells under control. Some operators may try to justify such actions by claiming that oil not immediately produced would be lost to them forever. This assumption may be correct, but it is probable a close check upon the total oil already recovered by operators who resort to earthen storage practice would reveal the fact that their wells have already produced more oil from their drainage area than could normally be assigned to this area. In other words it is a form of the old "hot oil" racket and damaging to the industry as a whole and to all portions of the East Texas Field where practiced.

Why Was It Called That?

SOAP

Certain laundry soap and mechanics' soap (the latter much used in oil fields) contain a petroleum derivative, naphtha. The word "soap" is apparently of Scandinavian origin. Its middle English form was "sope." For more than 45 years Fred W. Stansbury has cultivated his taste for soap in a Cleveland, Ohio, soap factory. Daily he stands beside a huge kettle of a boiling mixture and from time to time gets a sample in a long-handled spoon. After cooling it he takes a drop in his mouth. If the sample contains just the right proportion of alkali it will nip the tongue slightly. If it is flat to the taste the veteran soap-maker knows the mixture needs more cooking. Mr. Stansbury is superintendent now and although he could have the testing done by laboratory methods, he prefers to trust his own taste.

Porosity and Permeability Don't Have a Fixed Relationship

I recently had a specimen of sand tested at the Bureau of Mines laboratory for porosity and permeability. I was advised that the porosity was 15.3 per cent, but no reference was made to permeability. I would like to know whether sand of this porosity can be repressured successfully with air or gas and about what pressure and volume it would require.—A. H. C.

Not much of really helpful character can be said in answer to your specific questions concerning repressuring a sand tested by the U. S. Bureau of Mines. The core must be in hand to obtain an engineering opinion of genuine value.

Porosity and permeability do not have fixed relations. Some sands of relatively low porosity provide a good permeable medium for water flooding or gas repressuring. Offhand it might be said that a sand having a porosity of 15.3 per cent should be suitable for repressuring with gas or air, but there are other factors more important to the success of such an undertaking than porosity or permeability.

Particular reference is made here to saturation. What percentage of its original oil is still retained in this sand? Does the sand contain water? Is the reported porosity applicable to the whole section penetrated by the open hole, or are parts of the sand more porous and thus able to take the compressed gas more freely than the stratum containing the residue oil?

Modern repressuring contemplates selection of a medium and selection of a pressure and volume best suited to the particular section.

Sedimentation does not provide a uniform section of materials, and there will be hard and soft streaks, very porous and very tight reservoir rocks, different degrees of saturation and also variable recoveries. These things and many others are important factors in considering a repressuring problem and it is recommended that you submit the whole question to engineers and laboratory operators familiar with this subject and then take their advice.

In the Eastern fields after a long period of flooding many operators are now seriously considering the mining of the oil sands. You might well investigate the possibilities of mining your formation. Talk this matter over with a good mining engineer, one who has had experience in mining coal in Oklahoma and Kansas or zinc ore in the Joplin, Mo., district. There are plenty of them now available and they can apply their knowledge of mining to your problem easily and perhaps with profitable results for you. If the sand body is opened and the sand extracted you will then be assured that the reservoir is depleted 100 per cent and that is really, in the last analysis, what you are interested in.

This is such a big subject that it is impossible to give more than general advice. Employ a good technical adviser. Read and consider what others have done in repressuring and try to avoid the mistakes they made. Be sure before you invest in plant and operating equipment that there is sufficient oil remaining in the formation to justify the expense of trying to get it by this method. It is suggested too that you read the dozen or so articles on this and related subjects by R. C. Conine in The Oil and Gas Journal in the past year and a half.

Gulf Coast Fields

(Continued from Page 74)

immediate drilling campaign in this part of the field. The company has moved in for its No. 10 Granbury, located 466 feet northwest and 466 feet southwest from the south corner of the L. G. Howard 75-acre tract in the A. Viesca Survey.

COASTAL LOUISIANA

The Sorrento Dome in Ascension Parish was extended to the northwest by the completion of the best producer when Athen Oil Co.'s No. 1 United Land made an initial production of 2,080 bbls. per day through a three-eighths inch choke from a total depth 4,352 feet. In the same parish but in the Darrow Field, Humble Oil & Refining Co. completed its No. 5 Humble at a total depth of 5,513 feet for an initial production of 468 bbls. in 18½ hours on various chokes with tubing pressure 400 pounds and casing pressure 1,200 pounds.

In the Lake Pelto Field of Terrebonne Parish, Texas Co.'s No. 12 Lake Pelto established a deeper pay horizon when completed at a total depth of 6,270 feet, after it had been plugged back, sidetracked at 4,542 feet and drilled to 6,105 feet in salt, with the top being encountered at 6,013 feet. It was plugged back again to 2,503 feet, where it was sidetracked and redrilled to its present depth. The top of the oil sand was encountered at 6,255 feet and with 7-inch casing cemented at 6,230 feet, it was completed for an initial production of 20 bbls. of fluid per hour through a one-quarter inch choke on 2½-inch tubing, making 5 per cent b.s. and salt water.

The only production developed on the dome to date has been caprock production found at approximately 1,300 feet. However, there is no commercial production being produced in the field at this time.

In the Bosco Field, Acadia and St. Landry Parishes, three producers and two locations were reported, all being by Superior Oil Producing Co. No. 3 Johnson in Section 34 made 231 bbls. in 24 hours from a total depth of 8,688 feet; No. 5 Hernandez made 500 bbls. per day from a depth of 7,845 feet, and No. 2 Mire in Section 33 made 518 bbls. in 24 hours from a depth of 8,655 feet. The locations included No. 2 Allemond, located 3,390 feet south and 512 feet from the NE cor. of Section 33-8s-3e. No. 10 Hernandez was staked 2,125 feet north and 1,155 feet west from the SE cor. of the NW of Section 34-8s-3e.

In the Gillis Field, Calcasieu Parish, Texas Co.'s No. 3 Nickerson in Section 12-9s-8w was completed for an initial production of 310 bbls. of oil per day through a one-eighth inch choke, with tubing pressure 1,075 pounds.

On the northwest flank of the Gueydan Dome in Vermillion Parish, Pure Oil Co. is bottomed at 9,399 feet and waiting on cement to set after 1,205 feet of 5¾-inch casing had been sealed to the bottom of the 8⅝-inch casing that was cemented at 8,540 feet.

Oklahoma Wildcats

(Continued from Page 84)

Sec. 14-2s-3.
6-in. 2,945 ft.; drlg. plugs.

Lewis Prod. Co.'s No. 1 Summers, SW cor. SE NW Sec. 17-27-2.
Drlg. 815 ft.

J. T. Lindsay's No. 1 Waggoner, NW NW NE Sec. 3-27-1.
Drlg. 2,080 ft.

Marshall, Haddock et al's No. 1 Hermes, SW SW NW Sec. 6-26-4.
T.D. 457 ft.; C.O.

KIOWA COUNTY

Rajah Oil Co.'s No. 3 Stone, C SE NE Sec. 34-7-17w.
Gas 923-34 ft.; oil 944-52 ft.; recmtd. csg.; T.D. 1,040 ft.

LEFLORE COUNTY

McCraw et al's No. 1 Tidwell, C NW SE Sec. 17-3-22.
Spudding.

LINCOLN COUNTY

Carter Oil Co. et al's No. 1 McFarland C-38, SW SW NE Sec. 18-13-4.
Wilcox sands at 5,279 ft. and 5,335 ft.; T.D. 5,345 ft.; will make Schlumberger test.

Chester L. Carlock's No. 1 Young, C N½ NW NW Sec. 23-15-5.
R.U. rotary.

Mid-Continent Pet. Corp. et al's No. 1 Nunn, SE SE NW Sec. 25-16-1.
Hunton 5,020 ft.; Sylvan 5,135 ft.; Viola 5,124 ft.; cored to 5,402 ft.; no showing.

Chas. Ralph's No. 1 Young, C N½ NW NW Sec. 23-15-5.
Spudded and S.D.

Stanolind O. & G. Co. and Amerada Pet. Corp.'s No. 1 Connelly, SE NE SE Sec. 23-14-7.
Cellar.

Stanolind O. & G. Co. and Amerada Pet. Corp.'s No. 1 Cavanaugh, SE NE Sec. 31-15-5.
T.D. 3,661 ft.; P.B. and shot at 3,520-30 ft.; swbd. 12 bbls. oil, 12 bbls. wtr. 24 hrs.

Texas Co.'s No. 1 Niccum, SE SW NW Sec. 28-14-5.
Prue sand 3,565 ft.; show of gas 3,578-84 ft.; drlg. 4,130 ft.

LOGAN COUNTY

Freeland et al's No. 1 Scrutchfield, NW NW NE Sec. 9-16-1e.
Cellar.

Houghton Royalty Co.'s No. 1 Townsite, SW SW SE Sec. 13-17-1w.
Bldg. rig.

Sinclair Prairie and Slick Urschel's No. 1 Koatsch, SW cor. Sec. 23-15-3w.
Second Wilcox 6,332 ft.; T.D. 6,341 ft.; cored 6,341-43 ft.; 4,000 ft. salt water in hole; trying to P.B. with cmt.

Slick-Urschel et al's No. 1 Pennington, C SW NE Sec. 10-16-1w.
Simpson dolomite 5,534 ft.; Wilcox 5,581 ft.; no show; lost circulation at 5,587 ft.

Stanolind O. & G. Co. et al's No. 1 Nunn, SE NW Sec. 25-15-1.
Drlg. 2,597 ft.

MAJOR COUNTY

Indian Territory Illuminating Oil Co. and Continental Oil Co.'s No. 1 Fairview, C E½ SW SE Sec. 32-22-14w.
Drlg. 3,420 ft.

NOBLE COUNTY

Marathon Oil Co.'s No. 1 Gilbert, NE cor. Sec. 24-22-1.
Wilcox sand 4,449 ft.; T.D. 4,480 ft.; flowed 1,792 bbls. in 7 days; may deepen.

OKFUSKEE COUNTY

Amerada Pet. Corp.'s No. 1 Jaynes, NW NW SW Sec. 20-10-10.
Hunton 3,690 ft.; 10,000,000 ft. of gas at 3,704 ft.; Wilcox sand 3,933 ft.; T.D. 4,-025 ft.; 275 ft. wtr. in hole; P.B. to 3,-882 ft.

Sunray Oil Co.'s No. 1 Culla, NE SW NE Sec. 13-12-8.
Cellar and pits.

Wilcox O. & G. Co.'s No. 1 Connelly, SE NE SE Sec. 23-14-2e.
Location.

OKLAHOMA COUNTY

Gypsy Oil Co. and Indian Territory Illuminating Oil Co.'s No. 1 Salisbury, NW NE NE Sec. 13-14-4w.
Drlg. 3,275 ft.

Sinclair Prairie O. & G. Co.'s No. 1 Corbett, NE NW NE Sec. 17-13-3w.
Simpson Dense 6,434 ft.; waiting for cmt.

Slick-Urschel Oil Co. et al's No. 1 Owen, SE cor. Sec. 19-13-3w.
Simpson 6,558 ft.; T.D. 6,785 ft.; 33,000,-000 ft. gas.

OSAGE COUNTY

J. A. Freeberg et al's No. 1, NE cor. SE Sec. 1-25-6.
Cellar.

PAWNEE COUNTY

Stanolind O. & G. Co.'s No. 1 Shunatana, NE SW SE Sec. 32-22-3.
Moving in rotary.

PITTSBURG COUNTY

Choctaw Gas Co.'s No. 1 Bunyard, SE SE NE Sec. 18-7-18.
Drlg. 1,305 ft.

McAllister Pet. Corp. et al's No. 1 Chunn, C SE NW Sec. 29-4-14.
T.D. 1,530 ft.; pipe collapsed; S.D.

P. H. Gray et al's No. 1 Lee, NW SE Sec. 12-5-12.
T.D. 1,210 ft.; fishing tools; S.D.

PONTOTOC COUNTY

E. M. Blanchard's No. 1 Crabtree, NE SE NE Sec. 27-3-4.
S.D. 2,920 ft.

Philip Boyle's No. 1 McCracken, NE NW NW Sec. 31-5-4.
Hole full black oil 2,160 ft.; H.F.W. 2,-170 ft.; recmtd.; bailing.

Charles E. Carter's No. 1 Wood, NW SW SE Sec. 5-4-3.
S.D. 2,405 ft.

Continental Oil Co.'s No. 1 McCarty, C SW NW Sec. 12-1-7e.
Location.

Crabb-Craw Oil Co.'s No. 1-A Breco, SE NE SW Sec. 2-4-6.
Sand 1,106-18 ft.; pumped 10 bbls. in 24 hrs.; S.D.

W. A. Delaney et al's No. 1 Fulsome, SE NE Sec. 35-4-6.
Location.

Fleetborn Oil Corp.'s No. 2 Oliver (twin), 250 ft. S and 1,040 ft. E of C Sec. 21-4-5.
Gas at 848-55 ft.; wtr. at 938 ft., T.D.; fishing.

Mudge O. & G. Co.'s No. 1 Ciampett, SW NW NW Sec. 10-2-6.
S.D. 915 ft.

Gillette & Kroeger's No. 1 Duver, NW SE Sec. 26-1n-6e.
6"/ 1,200 ft

Southern Oil Co.'s No. 1 Perry, SW SW NW Sec. 11-4-6.
Rig on ground.

Southern Oil Co.'s No. 1 Walker, NW NW SW Sec. 11-4-6.
H.F.W. 1,530 ft.; P.B. to 1,178 ft.; set 8-in. csg. 1,160 ft.

Leonard Williams et al's No. 1 Breedon, NW cor. Sec. 6-2-5.
Spudded and S.D.

PUSHMATAHA COUNTY

Ungerman et al's No. 1 Misser, SE SW SW Sec. 35-3s-18e.
T.D. 3,196 ft.; waiting for fuel.

SEMINOLE COUNTY

Carter Oil Co. and Shell Petroleum Corp.'s No. 1 Brown, C W½ SE SW Sec. 23-8-5.
T.D. 116 ft.; waiting for cmt.

L. Cooper's No. 1 Chandler, NE SE SW Sec. 4-5-6.
S.D. 1,780 ft.

Ray Dorris and J. T. Hall's No. 1 Dorris, SE SE SW Sec. 31-10-7.
Sand 520-60 ft.; H.F.W.; S.D. 608 ft.

Van Deventer et al's No. 1-A Bender, NE NE SW Sec. 3-5-8.
T.D. 1,843 ft.; S.D. for liner.

Verser & Clay et al's No. 1 Thomas, NE SE NW Sec. 1-6-6.
S.D. at 2,802 ft.

Tom Phillips et al's No. 1 Abbott, NE cor. Sec. 33-8-7.
Viola 4,226 ft.; coring 4,338 ft.

WASHITA COUNTY

Okla.-Midwestern Oil Co.'s No. 1 Dock, SW cor. Sec. 21-8-18w.
T.D. 2,430 ft.; lost tools in hole; rig rebuilt; drlg. 2,560 ft. in lime.

L. P. McWhirter's No. 1 fee, SW cor. Sec. 24-8n-19w.
Drlg. 590 ft.

SOUTHERN OKLAHOMA

ATOKA COUNTY

Amerada Pet. Corp., Stanolind O. & G. Co., et al's No. 1 Travelers Life Ins. Co., SW NW SE Sec. 28-1s-9e.
Location.

Clark et al's No. 1 Morrison, SE cor. Sec. 32-1-14.
S.D. 200 ft.

Claro et al's No. 1 Bass, 510 ft. N and 1,170 ft. E of C Sec. 9-1s-14e.
Fishing 1,250 ft.

Keaton et al's No. 1-A Roland, NE cor. NW NE NE Sec. 16-3s-10e.
T.D. 850 ft. (corrected); lime at 800-47 ft.; will treat.

Malsrnee et al's No. 1 D. O. K. Land Co., C SE SE Sec. 36-2s-13.
S.D. 3,115 ft.

R. H. Pierce et al's No. 1 Aetna Life Ins. Co., NW SW NE Sec. 10-1n-13e.
R.U. standard tools.

H. W. Sears et al's No. 1 Downing, SE NW Sec. 17-1s-14.
Moving in tools.

BRYAN COUNTY

Welch Oil Corp.'s No. 1 Collins, NE NE Sec. 19-8s-8e.
T.D. 570 ft.; S.D.

J. D. Parks' No. 1 Coats, SE NE SW Sec. 1-5s-8e.
T.D. 325 ft.; S.D.

Trio Oil Co.'s No. 1 Gilbert, SW NE SW Sec. 25-8s-7.
Dry sand 707-22 ft.; S.D.

CARTER COUNTY

Bland et al's No. 1 Center, NE cor. Sec. 6-4s-2e.
Rigged up.

Waco Turner's No. 1 Munson, NE NW NE Sec. 35-5s-2w.
T.D. 4,156 ft.; C.O.

Carter Oil Co.'s No. 1 Carter-Williams, SW NE SW Sec. 27-2s-3w (7,000-ft. test).
Drlg. 6,218 ft.

Paul Robb's No. 1 Burton, 660 ft. N and 185 ft. W of C Sec. 31-1s-2w.
Location.

CHOCTAW COUNTY

E. B. Abernathy's No. 1 Christian, 400 ft. N and 1,245 ft. W of SE cor. Sec. 1-6s-19e.
Machine; S.D. 186 ft.

Burns et al's No. 1 Hallum, NE NW NW Sec. 4-7s-20.
Spudded and S.D.

JACKSON COUNTY

Associated Oil Co.'s No. 1 Harrell, NE NE SE Sec. 13-1s-21w.
S.D. 875 ft.; red beds.

J. G. Busi et al's No. 1 Kizziar, SE SE NE Sec. 2-2n-22w.
Drlg. 2,270 ft.

Burke-Greis Oil Co.'s No. 1 Millbrant, SW NW SW Sec. 31-3-18w.
Dry and abd. 1,320 ft.

Dengall Oil & Gas Co.'s No. 1 Robinson, SE SE NE Sec. 32-1s-22w.
Rig.

Gypsy Oil Co.'s No. 1 Boucher, NW SW SW Sec. 32-1-19w.
H.F.W. 2,228 ft.; U.R. 6-in. csg.

Gypsy Oil Co.'s No. 1 Stokes, SE NW SW Sec. 11-1-20w.
Lime 1,709-11 ft.; T.D. 1,722 ft.; S.D.

Marshall & Burnham's No. 1 Hess, NE SW NE Sec. 27-1s-20w.
T.D. 1,737 ft.; S.D.

Palo Duro Oil Co.'s No. 1 Ealum, SW SW SE Sec. 15-2-21w.
Drlg. 1,403 ft.

Robberson & Suppes' No. 1 Walker, SW cor. Sec. 19-4-20w.
Drlg. granite wash at 1,425 ft.

Triangle Oil Co.'s No. 1 Fox, E½ W½ NW Sec. 11-3n-20w.
S.D. 60 ft.; (correction).

Whatley & Whatley's No. 1 Holt, NW SW SE Sec. 20-1n-20w.
S.D. 1,430 ft.

JEFFERSON COUNTY

Gypsy Oil Co.'s No. 1 James, SW SE SE Sec. 20-4s-6w.
S.D. 2,102 ft.

Ben H. Levy et al's No. 1 Ryan, NW cor. Sec. 16-4s-6w.
Top of lime 1,880 ft.; drlg. 1,985 ft.

JOHNSTON COUNTY

W. A. Delaney et al's No. 1 Diamond, NW NE SE Sec. 5-1s-8.
Drlg. 2,100 ft.

Schermerhorn Oil Co.'s No. 1 Rich, SW SE SE Sec. 35-4s-4e.
Drlg. 598 ft.; (correction).

LOVE COUNTY

Sinclair Prairie Oil Co.'s No. 1 Stockton, SE SE SW Sec. 26-6s-2w.
Location for 5,000-ft. test.

MARSHALL COUNTY

Jess Cook et al's No. 1 May, NE NW Sec 12-5s-5.
Drlg. 75 ft.

Paul Robb's No. 1 Vittetoe, C NE SE Sec. 11-5s-4e.
Top Sylvan shale 5,405 ft.; T.D. 5,461 ft.; S.D.

MURRAY COUNTY

Equitable O. & G. Co.'s No. 1 Ferguson, NE NE SW Sec. 36-1s-2.
Drlg. 1,230 ft.

Hornsby & Jones' No. 1 Sadler, NE NE NW Sec. 20-1-2.
Location.

STEPHENS COUNTY

Wm. Angle et al's No. 1 Cooper, NE NW NW Sec. 23-3-7w.
Drlg. 3,737 ft.

Geo. Pace et al's No. 1 Daily, NE NE NE Sec. 26-1n-3w.
Drlg. 3,302 ft.

TILLMAN COUNTY

J. G. Buell et al's No. 1 Haught, SE NE Sec. 22-1-16w.
Drlg. 828 ft.

Rock Island Ref. Co.'s No. 1 Lynch, C SE SW Sec. 35-1s-16w.
Drlg. 1,905 ft.

Loper et al's No. 1 Conrad, NE cor. Sec. 35-1s-19w.
Drlg. in brown shale, 1,660 ft.

Gulf Coast Wildcats

(Continued from Page 74)

N and W of SE cor. of 71-ac. lease, A.C. H.&B. Sur.
7-in. csg. 5,862 ft.; T.D. 6,100 ft.; I.P. 25 bbls. per hr. through 10/64-in. choke; T.P. 750 lbs.; C.P. 525 ft.

MANVEL—BRAZORIA COUNTY

Bowles and Barsodi's No. 5 B. E. Norvell Investment Co., 274.5 ft. from S line, 440 ft. from E line of Lot 45, Sec. 23, H.T.&B. Sur.
Location.

T. J. Holcombe's No. 1 A. F. Beddo, 220 ft. from E line, 248 ft. from S line of Blk. 29, H.T.&B. Sur.
Rig up.

Jay Simmons' No. 1 Stitt, located in center of W 5 acres of Lot No. 28, H.T.&B. Sur. No. 23.
T.D. 4,008 ft.; 7-in. csg. 3,990 ft.; drilled to 4,004 ft.; swbng. S.W. and oil.

J. W. Sorrells' No. 1 Swift, Blk. 21, Abst. 318, H. N. Little Sur.
Derrick.

Texas Co.'s No. 2 Morrison, 330 ft. from E line, 330 ft. S of NW cor. of Lot 32, A.C. H.&B. Sur.
Location.

Texas Co.'s No. 3 Boff, 50 ft. W, 50 ft. S of NE cor. of Lot No. 24, Charles O'Donnell Sur.
Rig up.

Texas Co.'s No. 2 A.R.G.H. Co., 220 ft. E and 247 ft. N of SW cor. of Lot 38, H.T. &B. Sur.
T.D. 4,021 ft.; running 7-in. csg.

Texas Co.'s No. 8 Ewing, 770 ft. S, 41 deg., 40 ft. W and 648 ft. N, 47 deg., 59 ft. from E cor. of lease, H. N. Little Sur.
Drlg. shale and lime 3,642 ft.

Texas Co.'s No. 4 F. Leider, 150 ft. S, 42 deg. W from the lease line and 150 ft. S, 48 deg. E from NW line of Lot 3, H. N. Little Sur.
10-in. csg. 1,135 ft.; drlg. shale and sand 2,332 ft.

Texas Co.'s No. 14-B Belcher, 660 ft. S 42 deg. W from No. 9-B Belcher, H. N. Little Sur.
T.D. 5,158 ft.; 7-in. csg. 5,120 ft.; I.P. 16 bbls. per hr. through ¼-in. choke; T.P. 475 lbs.

Texas Co.'s No. 1 O. W. Halligan, center of Lot 27, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 1 O. W. Halligan, center of Lot 26, H.T.&B. Sur. No. 23.
Location.

Texas Co.'s No. 17 Houston Oil Fields Assn., 244 ft. S, 244 ft. W from NE cor. of Lot 1, A.C.H.&B. Sur. No. 91.
T.D. 3,992 ft.; 7-in. csg. 3,974 ft.; swbd. dry; reset screen; I.P. 175 bbls. per day through ¼-in. choke.

Texas Co.'s No. 16 Houston Oil Fields Assn., 247 ft. S, 440 ft. E from NW cor. of Lot 19, A.C.H.&B. Sur. No. 91.
Drlg. gumbo 1,299 ft.

Texas Co.'s No. 2 Dawson, 247 ft. S, 241 ft. W of NE cor. of Lot 58, H.T.&B. Sur. No. 23.
Location.

Trumba Oil Co.'s (J. M. Campbell) No. 1 H. McCauley, 150 ft. each way out of NE cor. of W 5 acres of Lot No. 3, A.C. H.&B. Sur. No. 91.
Location.

Uscan Oil Co.'s No. 1 Ebbert, 247.5 ft. from N line, 247.5 ft. from S line of 10-ac. tract, Sec. 23, H.T.&B. Sur.
Rig up.

Whittle Oil Co.'s No. 1 Duke, 320 ft. W of E line, center N and S Lot 18, H.T.&B. Sur. No. 23.
Spudded and S.D.

Woodbine Oil Co.'s No. 1 A. F. Beddo, midway N and S lines of a 3-ac. lease, Blk. 29, H.T.&B. Sur.
Derrick.

OLD OCEAN—BRAZORIA COUNTY

Harrison & Abercrombie's No. 2 Bernard River, 1,000 ft. N, 84 deg. W, 400 ft. S, 36 deg. W of No. 1, Charles Breen Sur.
Drlg. shale 5,515 ft.

PORT LAVACA—CALHOUN COUNTY

Empire G. & F. Co.'s No. 1 Hartman, 1,524 ft. from SE line, 497 ft. from NE line of 50-ac. lease, M. Sanches Sur.
Drlg. shale 1,300 ft.

Empire G. & F. Co.'s No. 1 Dusek, 540 ft. W of E line, 440 ft. N of S line of E 70 acres of 102.4-ac. tract, W. Benavides Sur. Abd. location.

Halliburton Oil Prod. Co.'s No. 2 Dave Burton, 330 ft. SW along E line of Texas Co.'s Shofner 10-ac. lease and 330 ft. at R/A. M. Ganches Sur.
Drlg. sand 5,310 ft.

Steinberger Pet. Co.'s No. 2 Shofner, 932 ft. SW of No. 1 Shofner, and 466 ft. from SE line of tract, M. Sanches Sur.
Rig up.

Texas Co.'s No. 1 Hackney, 1,504 ft. N of S line and 466 ft. E of W line of B. Rodriquez Sur.
Drlg. shale 3,730 ft.

Texas Co.'s No. 1 Ada Foster, 1,250 ft. W along S line from SE cor. of lease and 466 ft. N at R/A, A. Esparsa Sur.
Abd. location.
Texas Co.'s No. 1 Geryk, 1,400 ft. W from E line, 470 ft. N from S line of lease, Lot 7, Ysidro Benavides Sur.
Abd. 6,780 ft.
Texas Co.'s No. 1 Kupatt, 466 ft. E from S line of lease, Lot 17, Ysidro Benavides Sur.
Abd. 6,305 ft.
Texas Co.'s No. 1 Shofner, SE offset to Steinberger's No. 1 Shofner, M. Sanches Sur.
T.D. 6,260 ft.; 7-in. csg. 6,232 ft.; flowed at rate of 15 bbls. per hr. on 24/64-in. choke; well went dead; ran swab; found oil at 800 ft.; S.W. at 1,200 ft.; pulling screen to plug off part of sand.
Texas Co.'s No. 1 R. Duelberg, 1,565 ft. NE along S line from SW cor. of lease and 390 ft. N at R/A, M. Sanches Sur.
Abd. 6,240 ft.
Texas Co.'s No. 1 J. A. Marten, 1,700 ft. SW along N line from NE cor. and 1,400 ft. at R/A in SE direction, Florentina Garcia League Sur.
T.D. 7,512 ft.; abd.
Tulane Gordon's No. 1 W. A. Shofner, 339.5 ft. from N line, 295 ft. from E line of block, D. Tilley Addn., M. Sanches Sur.
Location.

ANAHUAC—CHAMBERS COUNTY

Humble O. & R. Co. and Rycade Oil Co.'s No. 1 Engels, 466 ft. out of SE cor. of Sec. 50, H.&T.C. Sur.
Location.
Humble O. & R. Co.'s No. 2 Broussard, 2,332 ft. E of W line, 2,332 ft. N of S line of Sec. 63, H.&T.C. Sur.
Location.
Humble O. & R. Co.'s No. 3 Broussard, 1,399 ft. out of NW cor. of Sec. 63, H.&T. C. Sur.
Derrick.
Humble O. & R. Co.'s No. 2 Clark, 2,332 ft. W of E line, 2,332 ft. N of S line of Sec. 57, H.&T.C. Sur.
Drlg. shale 3,320 ft.
Humble O. & R. Co.'s No. 3 Middleton, 2,332 ft. N of S line, 2,332 ft. E of W line of Sec. 58, H.&T.C. Sur.
T.D. 7,172 ft.; I.P. 30 bbls. per hr.; 1,050 lbs. T.P.; 1,250 lbs. C.P.

BARBERS HILL—CHAMBERS COUNTY

Mills Bennett Prod. Co.'s No. 2-C Barber, 93 ft. N of No. 1, 100 ft. E of W line.
T.D. 5,220 ft.; 9⅝-in. csg. 5,180 ft.; swbd. dry; R.U. to deepen.
Sun Oil Co.'s No. 7 Higgins, 50 ft. S of N line, 50 ft. W of E line.
Drlg. shale 3,620 ft.
Sun Oil Co.'s No. 11 Chambers County, half way between and in line with Nos. 9 and 10.
Drlg. shale 3,730 ft.
Texas Gulf Prod. Co.'s No. 25-B Kirby, 75 ft. S of N line of Kirby "B" Lease, S offset to No. 3 Fitzgerald.
Drlg. shale 1,377 ft.
Texas Gulf Prod. Co.'s No. 6 Wilburn, 50 ft. N of S line, 25 ft. E of W line, William Hodges Sur.
Reaming 4,556 ft.
Texas Gulf Prod. Co's No. 2 Fitz-Meadows, 331 ft. S of N line, 50 ft. W of E line of T. S. Fitz lot.
T.D. 4,563 ft.; P.B. 4,040 ft.; perforated csg.; testing; swabbing.
Yount Lee Oil Co.'s No. 30 Chambers County School Land, 50 ft. N of S line, direct offset to Sun Oil Co.'s No. 11.
Drlg. rock 2,023 ft.

LOST LAKE—CHAMBERS COUNTY

Pure Oil Co.'s No. 19 Mays, 400 ft. SE of No. 11, 400 ft. SW of No. 14, E. H. R. Wallace Sur.
T.D. 2,806 ft.; preparing to pump; 1,100 ft. of oil in hole.

BIG CREEK—FORT BEND

Trans State Oil Co.'s No. 1 B. J. Wheat, 108 ft. N of S cor. of J. F. Ahlers lease and 88 ft. E at right angles, W. Young Sur.
Rig up.

BOLING—FORT BEND COUNTY

Irwin Larsen et al's No. 1 J. R. Farmer, 100 ft. NW and 100 ft. SW from E cor. of 125-ac. lease, James Scott Sur.
Location.
Midland Oil Co.'s No. 1 P. F. Coulter, 150 ft. from S line, 4,174 ft. from W line of 100-ac. tract, Miller League No. 2.
Set screen; T.D 4,186 ft.
Sun Oil Co.'s No. 1 H. R. Farmer, 103 ft. from N line, 359.2 ft. from W line of 100-ac. tract, James Scott League Sur.
Coring sand 3,959 ft.
Yew Development Co.'s No. 1 C. E. Farmer, 400 ft. S and 325 ft. W of the NE cor. of 50-ac. lease, James Scott Sur.
Rig up.

ORCHARD—FORT BEND COUNTY

Gulf Prod. Co.'s No. 44 Moore, 500 ft. NW of No. 42, Leo Burknapp Sur.
Moving in rig.
Gulf Prod. Co.'s No. 43 Moore, 350 ft. E along S line of SW cor. of E.M.&G. Co. Sur. and 740 ft. N at R/A to said line of lease, 350 ft. E of No. 3 Moore.
Drlg. shale 6,323 ft.

THOMPSON—FORT BEND COUNTY

Gulf Prod. Co.'s No. 25 F. I. Booth, 485 ft. from N line, 698 ft. W of No. 24, S. Kennedy Sur.
Rigging up.
Gulf Prod. Co.'s No. 9 Hammerstram, S. Kennedy Sur
Location.
Gulf Prod. Co.'s No. 10 Hammerstram, S. Kennedy Sur.
Drlg. sandy shale 5,390 ft.
Gulf Prod. Co.'s No. 12 Gubbels.
T.D. 5,350 ft.; I.P. 15 bbls. per hr.; ⅝-in. choke; 520 lbs. T.P.; 600 lbs. C.P.
Humble O. & R. Co.'s No. 2-B Gubbles, 500 ft. E of W line, 500 ft. N of S line, 638 ft. W of No. 4-B Gubbles, S. Kennedy Sur.
Drlg. 902 ft.

Humble O. & R. Co.'s No. 1-B Gubbels, 466 ft. out of SE cor. of 100-ac. tract, Sam Kennedy League.
T.D. 5,300 ft.; I.P. 55 bbls. per hr.; ⅝-in. choke; 500 lbs. T.P.; 625 lbs. C.P.
Humble O. & R. Co.'s No. 25-A Booth.
Derrick.

HIGH ISLAND—GALVESTON COUNTY

Yount Lee Oil Co.'s No. 1-C Geo. Smith, D. Dunman Sur.
Rig up.
Yount Lee Oil Co.'s No. 47 Cade, Fitzsimmons Sur.
Drlg. shale and lime 2,608 ft.
Yount Lee Oil Co.'s No. 2 Louslafot, 150 ft. due S of No. 1, M. Dunman Sur.
Drlg. shale and lime 3,017 ft.
Yount Lee Oil Co.'s No. 2-A Taylor, 85 ft. W of No. 1, A. Dunman Sur.
Drlg. sand and shale 4,445 ft.
Yount Lee Oil Co.'s No. 46 Cade, 424 ft. SW of No. 35, 424 ft. NW of No. 36, Fitzsimmons Sur.
Coring sand and shale 5,327 ft.
Yount Lee Oil Co.'s No. 1 Taylor, D. Dunman Sur., 125 ft. due E of No. 1-A Gordon-Viterbo.
T.D. 4,853 ft.; running 7-in. csg.; testing.

DICKINSON—GALVESTON COUNTY

Humble O. & R. Co.'s No. 5-A Stewart, 466 ft. W of E line of Stewart "A" Lease, 5,500 ft. due S of No. 2-A Stewart, John Sellers Sur.
Location.
Humble O. & R. Co.'s No. 1 Bayou Development Co., 375 ft. S of N line and midway between E and W lines of Lot No. 7, John Sellers Sur.
Location.
Humble O. & R. Co.'s No. 2-B Maco Stewart, 400 ft. from N line of Bayou, 610 ft. from No. 1-B, John Sellers Sur.
W.O.C. 8,063 ft.
Humble O. & R. Co.'s No. 1 E. E. Anderson, 375 ft. N of S line, and midway between E and W lines of Lot No. 4, John Sellers Sur.
Location.
Humble O. & R. Co.'s No. 1 Fugger, 323 ft. from W line, 522 ft. from N line of lease, J. S. Sherman Sur.
T.D. 8,081 ft.; D.P. from 8,077-81 ft.; pulled to perforate csg.
Humble O. & R. Co.'s No. 1 Townes, 440 ft E of W line, 550 ft. N of N bank of Bayou, B.B.B.&C. Sur.
Prep. to make D.S. test, 8,062 ft.
Humble O. & R. Co.'s No. 2-A Maco Stewart, 3,324 ft. S along E line of S bank of Bayou and 566 ft. W of E line at R/A John Sellers Sur.
Drlg. sand and shale 8,515 ft.
Stanolind O. & G. Co.'s No. 1 State, 247 varas S of Humble O. & R. Co.'s No. 1 Jones.
Spudded and S.D.

ARRIOLA—HARDIN COUNTY

Houston Oil Co.'s No. 8 fee, Arriola Sur.
T.D. 3,050 ft.; pulling screen and liner to workover.
Houston Oil Co.'s No. 6-X fee, 400 ft. SE of No. 4-X, 500 ft. SE of No. 5-X fee.
Drlg. shale 4,774 ft.
Republic Prod. Co.'s No. 12 fee, 2,599 ft. S of N line, 474 ft. E of W line, of E. Arriola Sur.
Drlg. hard sand 3,429 ft.

BATSON—HARDIN COUNTY

Danciger Oil & Refining Co.'s No. 1 Tom Wynne, 250 ft. S, 150 ft. W of Deering's No. 1 Cruse.
Coring shale and shells 5,862 ft.
John Deering's No. 1 Conzelman, 2,810 ft. E along N line, from NW cor. of H. Numm Sur. and 35 ft. at R/A, W. Donoho Sur.
Drlg. hard shale 4,949 ft.
John Deering's No. 1 Bullock, 1,000 ft. N. 17 ft. E of middle line of 30-ac. tract, Bullock tract, Dondo Sur.
T.D. 6,294 ft.; hole heaved to 4,944 ft.; S.D.
John Deering's No. 2 Cruse, 200 ft. E and 50 ft. S of No. 1 Cruse, W. Donaho Sur.
Rig up.

PIERCE JUNCTION—HARRIS COUNTY

J. S. Abercrombie's No. 5 John Ritter, 259 ft. SW of No. 4, 1,047 ft. NE along SE line out of SW cor. of 160-ac. tract, thence 93 ft. NW at R/A, Sec. 51, J. Hamilton Sur.
Drlg. shale 2,669 ft.
Gulf Prod. Co.'s No. 11 H. C. Cain, 390 ft. from W line, thence 439 ft. at R/A to N line of 130-ac. tract, Jas. Hamilton Sur. No. 98.
Drlg. gumbo 3,259 ft.
Gulf Prod. Co.'s No. 40 E. R. Taylor, 89.5 ft. along E line of E. R. Taylor's 560-ac. tract from SW cor., south offset to Hamil & Smith's No. 1 Howe.
Drlg. shale 5,034 ft.
Hamil & Smith's No. 1 C. W. Mowery, 50 ft. out of NE cor. of 600-ac. tract, Sec. 53, J. Hamilton Sur.
Drlg. shale 5,971 ft.
W. H. Holland et al's No. 1 L.&G.N.R.R., 330 ft. from S line of Jas. Hamilton Sur. Derrick.
Navarro Oil Co.'s No. 1 Dooley, J. Hamilton Sur.
Milled out at 5,700 ft. and redrilled 6,445 ft.; abd.

HUMBLE—HARRIS COUNTY

Sun Oil Co.'s No. 81 River.
Rig up.
Sun Oil Co.'s No. 20 Bender.
Rig up.
Sun Oil Co.'s No. 84 River, 300 ft. E of No. 61, in 292-ac. tract, R. Dunman Sur.
Drlg. rock 772 ft.
Sun Oil Co.'s No. 29 Bender, Robert Dunman Sur.
Drlg. shale 1,292 ft.
Texas Co.'s No. 32 Humble, 350 ft. S, 50 ft. W of T.T. Co. and C.O.&G. and 1,718 ft. E of NW cor. of lease, Stevenson Sur.
T.D. 3,149 ft.; 7-in. csg. 3,121 ft.; I.P. 12 bbls. per hr.; T.P. 30 to 120 lbs.

MYKAWA—HARRIS COUNTY

Alpha Pet. Co.'s No. 1 Waggenhausen, C of E½ Lot 10, F. J. Rothas Sur.
T.D. 4,681 ft.; P.B. 4,575 ft.; 7-in. csg. 4,516 ft.; flowed some oil and S.W.; P.B. to 4,416 ft.; swbng.
Danciger O. & R. Co.'s No. 3 Minnetet, 563 ft. due E of No. 1, thence 150 ft. at R/A, Blk. 254, W. H. Lovett Sur.
Drlg. shale 2,500 ft.
Flannigan Drlg. Co.'s No. 1 Minnetex, E½ of Blk. 261, Wm. J. Lovett Sur.
Derrick.
Sterling Oil & Ref. Co.'s No. 1 B. H. Williams, 200 ft. W of E line, 915 ft. N of S line of 29-ac. tract, Wm. Lovett Sur.
T.D. 4,416 ft.; running 7-in. csg.; swbng. 4,416 ft.
West Prod. Co.'s No. 1 Forbes, center of Blk. 15, F. J. Rothas Sur.
Rig up.
West Prod. Co.'s No. 1 J. E. Lobit, Blk. 9, F. J. Rothas Sur.
T.D. 4,542 ft.; 7-in. csg. 4,410 ft.; I.P. 25 bbls. per hr. through ⅝-in. choke.
West Prod. Co.'s No. 1 B. J. Speck, 330 ft. each way from the NW cor. of the tract, W. R. Wilson Sur.
Abd. 5,030 ft.

TOMBALL—HARRIS COUNTY

Amerada-Stanolind O. & G. Co.'s No. 2 W. H. Doyle, 357 ft. from E and W lines, 466 ft. from N line of 34-ac. tract, J. House Sur.
Cutting and pulling liner; T.D. 5,587 ft.
Amerada Pet. Corp.'s No. 3 A. B. Metzler.
Drlg. shale 3,330 ft.
Humble O. & R. Co.'s No. 2 Mueller.
Drlg. shale with streaks of lime 4,721 ft.
Humble O. & R. Co.'s No. 6-A Quilter, 1,241 ft. W of E line, 1,115 ft. N of S line, 728 ft. from No. 4, A. Senchal Sur.
Set 10¾-in. surface csg. 909 ft.
Humble O. & R. Co.'s No. 3 Gossett, 550 ft. from most northerly SE line, 186 ft. NE from southwesterly SW line, E. Smith Sur.
Drlg. sand and shale 5,524 ft.
Humble O. & R. Co.'s No. 1-A Hillegeist, 691 ft. N of S line, 168 ft. E of W line, 168 ft. W of E line of 11.65-ac. tract, James House Sur.
T.D. 5,566 ft.; top sand 5,558 ft.; running 7-in. csg.
Humble O. & R. Co.'s No. 2 Scherer, 1,872 ft. S of N line, 566 ft. E of W line, 566 ft. W of E line, J. H. Edwards Sur.
T.D. 5,587 ft.; 7-in. csg. at 5,582 ft.; W.O.C.
Shell Pet. Corp.'s No. 1 Rudel, 947 ft. W, 377 ft. N of SE cor. of lease, Wm. Hurd Sur.
T.D. 5,572 ft.; 7-in. csg. 5,541 ft.; comp.; no gauge.
Texas Co.'s No. 1 Mueller, 350 ft. S, 600 ft. W of NE cor. of lease, J. M. Hooper Sur.
T.D. 5,583 ft.; I.P. 20 bbls. per hr.; T.P. 250 lbs.

BIG HILL—JEFFERSON COUNTY

Yount Lee Oil Co.'s No. 1-B Pipkin & Davis, 2,325 ft. from E line and 2,325 ft. from N line of survey, Wm. McFadden Sur.
Drlg. sand 3,793 ft.

FANNETT—JEFFERSON COUNTY

Gulf Prod. Co.'s No. 5 Junker.
Drlg. hard rock 4,728 ft.

CLEVELAND—LIBERTY COUNTY

Black Gold Pet. Oil Corp.'s No. 2 R. D. McDonald, 466 ft. W of most westerly E line and 466 ft. N of most northerly S line of survey, 933 ft. W of Gulf Prod. Co.'s No. 7-C Kirby Lbr. Co., T. Devers Sur.
Derrick.
Gulf Prod. Co.'s No. 2 McDonald, 3,569 ft. W along S line from most easterly SE cor. of survey and 1,286 ft. N at right angles, Charles Smith Sur.
Drlg. sand and clay 110 ft.
William J. Colegrove et al's No. 1 State School Land & Dev. Co., 446 ft. from W line and 170 ft. from S line of survey, Clayton Harper Sur.
Location.

ESPERSON—LIBERTY COUNTY

General Crude Oil Co.'s No. 21 Esperson.
Fishing; T.D. 6,631 ft.
General Crude Oil Co.'s No. 1 W. D. Kay, Malcolm Duncan Sur., 1,537 ft. along N T.D. 9,343 ft.; P.B. to 6,230 ft.; waiting on cmt. to set.
General Crude Oil Co.'s No. 10 Davis, 2,000 ft. from E line, 660 ft. from S line of D. Kokernut Sur.
Drlg. shale 7,514 ft.

HANKAMER—LIBERTY COUNTY

Eastman-Ward's No. 1 R. E. Lee, 115 ft. from N line of lease and 76 ft. W of west bank of White Bayou, Geo. Stengler Sur.
Location.
Eljean Oil Co.'s No. 2 S. E. Ezzell, 130 ft. from N and S line of 10-ac. lease, Levi Barrow Sur.
Location.
Gulf Prod. Co.'s No. 1-B W. L. Bingle, 159 ft. E along S line of H.&T.C. Sur., thence 378 ft.
Drlg. sandy shale 5,152 ft.
Gulf Prod. Co.'s No. 19 E. W. Boyt, 100 ft. from W line, 298 ft. S of No. 18, Amos Allen Sur.
T.D. 2,651 ft.; I.P. 424 bbls. of fluid, 60% S.W.
Gulf Prod. Co.'s No. 20 E. W. Boyt, 1,235 ft. along W line of survey, 159 ft. from W line at R/A, Amos Allen Sur.
Drlg. shale 2,471 ft.
Gulf Prod. Co.'s No. 21 E. W. Boyt, 110 ft. from W line of Amos Allen Sur.
Location.
Gulf Prod. Co.'s No. 22 Boyt, Allen Sur.
Drlg. shale 4,484 ft.
Sterling O. & R. Co.'s No. 1 George Stengler, 100 ft. out of most westerly NE cor. of Geo. Stengler Sur.
Location.
Will Strozier et al's No. 1 Ezzell, 700 ft. N of S line, 150 ft. W of E line of Levi Barrow Sur.
Derrick.

Wilson Roach Oil Co.'s No. 2 Marrs-McLean, 513.4 ft. from W line, 100 ft. from E line, Levi Barrow Sur.
Drlg. shale 4,026 ft.

HULL—LIBERTY COUNTY

Fondren & Snowden's No. 2 Humble-Hooks, 50 ft. from S line, 300 ft. NW of No. 1, J. Devore Sur.
Drlg. shale 2,330 ft.
Sterling O. & R. Co.'s No. 2 Taylor, 70 ft. W, 50 ft. N of the NE cor. of Humble-Taylor lease, J. Devore League.
No report.

VAN VLECK—MATAGORDA COUNTY

Skelly Oil Co.'s No. 3 Cobb "B," 2,750 ft. from NW line, 2,900 ft. from SW line of M. Cummins Sur.
Drlg. shale 6,510 ft.

MARKHAM—MATAGORDA COUNTY

Hamil & Hamil's No. 1 Hardy, 150 ft. E and 150 ft. S from NW cor. Hardy lease, H. Parker Sur.
4,028 ft.; no report.

MOSS BLUFF—LIBERTY COUNTY

Gulf Coast Sulphur Co.'s No. 1 McManus, 588 ft. from E, 1,650 ft. from N line of W. A. tract, B. M. Spinks Sur.
Location.

CONROE—MONTGOMERY COUNTY

Humble O. & R. Co.'s No. 74-A South Tex. Lbr. Co., 466 ft. from N line, 1,500 ft. from W line of 325-ac. tract, Alex McCowan Sur.
T.D. 5,080 ft.; 7-in. csg. 5,052 ft.; prep. to pull tubing.
Sun Oil Co.'s No. 20 Fastic.
Location.

SPLENDORA—MONTGOMERY COUNTY

Bryce McCandless et al's No. 1 Texas Long Leaf Lbr. Co., 330 ft. from N and E lines of the W½ of Blk. No. 8, Walker County School Land Sur.
Derrick.

ORANGE—ORANGE COUNTY

Trio Oil Co.'s No. 1 D. S. Comier, 69 ft. W of E line and 39 ft. S of N line of 6.83-ac. tract in W. M. Dyson Sur.
S.D. 3,005 ft.

PORT NECHES—ORANGE COUNTY

Texas Co.'s No. 5-B (second), 897.5 ft. S. 850 ft. W from most westerly NE cor. of "B" Lease.
Rig up.
Texas Co.'s No. 5 Stark, 400 ft. from S and 125 ft. from E line of lease, M. E. Hall Sur.
Location.
Texas Co.'s No. 4-B Polk, 750 ft. S and 1,450 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Location.
Texas Co.'s No. 6-B Polk, 750 ft. S and 250 ft. W from NE cor. of lease, Jacob Beaumont Sur.
Location.

LIVINGSTON—POLK COUNTY

T. A. Carlton Oil Co.'s No. 2 Watt, 695 ft. N of No. 1, 365 ft. from E and W lines of lease, A. Viesca Sur.
10¾-in. csg. 390 ft.; T.D. 430 ft.
Gem Oil Co.'s No. 6 Davis & Holmes, 662 ft. from W and 662 ft. from N line of survey, A. Viesca Sur.
Rig up.
Hawkeye Pet. Co.'s No. 1 L. C. Howard, 365 ft. from E line, 330 ft. from S line of 75-ac. tract, A. Viesca Sur.
Rig up.
Hawkeye Pet. Co.'s No. 2 Howard, 365 ft. from E line of lease, 695 ft. N of No. 1, A. Viesca Sur.
Location.
Humble O. & R. Co.'s No. 10 Granbury, 466 ft. NW and 466 ft. SW from S cor. of L. C. Howard 75-ac tract, A. Viesca Sur.
Rig up.
Humble O. & R. Co.'s No. 9 Granbury & Smith, 2,000 ft. from N and 466 ft. from E lines of Sec. 10, A. Viesca Sur.
T.D. 4,229 ft.; I.P. 15 bbls. per hr.; T.P. 890 lbs.; C.P. 1,500 lbs.

SAN FELIPE—WALLER COUNTY

Buck Oil Co.'s No. 2 Vaughn, 200 ft. S, thence 200 ft. E from Seaport Oil Co.'s No. 1 Vaughn, J. McFarland Sur.
Drlg. shale 3,030 ft.

GRETA—REFUGIO COUNTY

Hewitt & Daugherty's No. 12 Lambert.
Rig up.

REFUGIO—REFUGIO COUNTY

Houston Oil Co.'s No. 11 Wilson Heard, 330 ft. S of center of N line on 5-ac. lease, Refugio townsite.
Set surface csg. 76 ft.
Houston Oil Co.'s No. 27 Rooke, 660 ft. S of No. 1 McMullen Sur.
T.D. 4,921 ft.; I.P. 136 bbls. in 6 hrs.
United Gas Co.'s No. 20 Lambert.
Drlg. shale 2,530 ft.

TOM O'CONNOR—REFUGIO COUNTY

Quintana Pet. Co.'s No. 11-A O'Connor, 2,200 ft. from W line, 2,900 ft. from N line of Swisher Sur.
Shale 3,930 ft.; no report.
Quintana Pet. Co.'s No. 12-A O'Connor, 5,250 ft. from W line, 3,750 ft. from N line of Swisher Sur.
Shale 3,975 ft.; no report.

McFADDIN-O'CONNOR DISTRICTS—VICTORIA AND REFUGIO COUNTIES

Texas Co.'s No. 9 McFaddin, 1,850 ft. N. 2 deg., 45 ft. S from No. 2.
7-in. csg. 6,196 ft.; T.D. 6,276 ft.; tested S.W.; may P.B. and complete as gas well.
Houston Oil Co.'s No. 1 Fagan, 330 ft. from Guadalupe River on the Fagan Island, F and J. M. Rodrigues Sur., SW of McFaddin Field.
T.D. 2,232 ft.; I.P. 15,000,000 ft. of gas through ¼-in. choke; C.P. 900 lbs.; T.P. 800 lbs.

CLAY CREEK—WASHINGTON COUNTY

Sun Oil Co.'s No. 14 Janner.
Rig up.
Sun Oil Co.'s No. 13 Janner, 400 ft. NW of No. 9, 565 ft. NE of No. 10, J. F. Perry Sur.
T.D. 1,449 ft.; I.P. 309 bbls. per day; 300 lbs. pressure.

LOUISE—WHARTON COUNTY

Pure Oil Co.'s No. 2 Wharton, 400 ft. NW and 450 ft. NE from the most westerly cor. of Sec. 24, F. Walnut Sur.
Drlg. shale 1,870 ft.

Pure Oil Co.'s No. 3 McIntyre, 485 ft. NE, 880 ft. SE from most NE cor. of 317.22-ac. lease, Morris & Cummings Sur.
Drlg. shale 3,690 ft.

Shell Pet. Corp.'s No. 1 A. and E. Steves, 1,400 ft. E and 1,200 ft. S of NW cor. of 1,279.4-ac. lease, J. J. Dillard Sur.
Derrick.

BAY ST. ELAINE—TERREBONNE PARISH

Texas Co.'s No. 3 School Board, Sec. 16-22s-15e.
Location.

Texas Co.'s No. 10 State, 4,550 ft. E and 4,595 ft. S of NW cor. of Sec. 17-22s-15e.
Building foundations.

CALLIOU ISLAND—TERRABONNE PARISH

Texas Co.'s No. 20 Calliou Island.
T.D. 4,119 ft.; S.D.; abd.

Texas Co.'s No. 23 Calliou Island.
Coring sand 4,046 ft.

SOUTH LOUISIANA FIELDS

BLACK BAYOU—CAMERON PARISH

Shell Pet. Corp.'s No. 23 Watkins, 1,683 ft. E. 1,525 ft. S of NW cor. Sec. 17-12-12.
Derrick.

Shell Pet. Corp.'s No. 24 Watkins, 2,832 ft. W, 695 ft. S of NW cor. Sec. 18-12-12.
Location.

Shell Pet. Corp.'s No. 22 Watkins, 2,230 ft. W and 1,340 ft. S of NE cor. Sec. 18-12s-12w.
T.D. 4,175 ft.; P.B. to 2,892 ft.

Shell Pet. Corp.'s No. 21 Watkins, 1,570 ft. E of NW cor. Sec. 17-12s-13w.
Cmtd. csg. 4,099 ft.

Shell Pet. Corp.'s No. 3 State.
T.D. 6,157 ft.; flowed S.W. for 6 hrs.; C.P. 675 lbs.; T.P. 25 lbs.

BOSCO—ACADIA AND ST. LANDRY PARISHES

Superior Oil Prod. Co.'s No. 2 Altmond, 3,-390 ft. S, 512 ft. W from NE cor. of Sec. 33-8s-3e.
Rig up.

Superior Oil Prod. Co.'s No. 10 Hermandez, 2,125 ft. N, 1,155 ft. W from SE cor. of NW¼ Sec. 34-8s-3e.
Spudded 45 ft.

Superior Oil Prod. Co.'s No. 5 Iseringhausen, 2,662 ft. S, 686 ft. E out of NW cor. of Sec. 35-8s-3e.
Drlg. shale 5,906 ft.

Superior Oil Prod. Co.'s No. 6 Larcade, 451 ft. N, 2,052 ft. E of SW cor. Sec. 26-8s-3e.
Drlg. sandy shale 8,285 ft.

Superior Oil & Prod. Co.'s No. 1 E. Arceneaux, 2,027 ft. E of NW cor., 4,583 ft. S of Sec. 35-8s-3e.
Drlg. sand and shale 8,521 ft.

Superior Oil & Prod. Co.'s No. 1 M. Benoit, 1,165 ft. W of SE cor., 2,320 ft. N, Sec. 34-8s-3e.
Drlg. sand and lime 8,589 ft.

Superior Oil Prod. Co.'s No. 2 Domingua, 3,194 ft. N, 1,150 ft. N of SE cor. Sec. 34-8s-3e.
Drlg. sand 8,345 ft.

Superior Oil & Prod. Co.'s No. 8 Hernandez, 105 ft. E, 219 ft. N of SW cor. of NW¼ Sec. 34-8s-3e.
T.D. 8,621 ft.; P.B. to 8,180 ft.; to sidetrack.

Superior Oil Prod. Co.'s No. 5 Hernandez, 1,-424 ft. S, 250 ft. W of NE cor. of NW¼ Sec. 34-8s-3e.
T.D. 7,845 ft.; 7-in. csg. 7,835 ft.; I.P. 550 bbls. per day; T.P. 1,300 lbs.; C.P. 1,300 lbs.

Superior Oil Prod. Co.'s No. 2 Richard, 2,-916 ft. S, 799 ft. W of NE cor. of Sec. 34-8s-3e.
T.D. 8,706 ft.; 7-in. csg. 8,691 ft.; I.P. 746 bbls. per day; T.P. 1,100 lbs.; C.P. 1,600 lbs.

Superior Oil Prod. Co.'s No. 3 Johnson, 2,-958 ft. S, 1,325 ft. W of NE cor. of Sec 34-8s-3e.
T.D. 8,688 ft.; 7-in. csg. 8,672 ft.; I.P. 231 bbls. per day; T.P. 1,475 lbs.; C.P. 1,750 lbs.

Superior Oil Prod. Co.'s No. 2 Le Blanc 1,698 ft. S, 937.99 ft. W of NE cor. Sec 33-8s-3e.
Cutting and pulling liner; T.D. 8,373 ft.

ASCENSION PARISH

Athens Oil Co.'s No. 1 United Land, 1,600 ft. S, 1,530 ft. W of NE cor. Sec. 15-10s-4e.
T.D. 4,355 ft.; I.P. 33 bbls. per hr. on 7/64-in. choke.

Humble O. & R. Co.'s No. 5 Community, 228 ft. SW of NE line of section, 200 ft. at R/A to east bank of river, Sec. 33-10s-2e.
T.D. 5,513 ft.; I.P. 468 bbls. in 18½ hrs.; ⅝-in. choke; T.P. 400 lbs.; C.P. 1,200 lbs.

Humble O. & R. Co.'s No. 4 Communit, 4,825 ft. from NE cor. and 283 ft. S of N line at R/A, Sec. 33-10s-2w.
Digging cellar.

CAMERON MEADOWS—CAMERON PAR ;Burton-Sutton Oil Co.'s No. 6 School Lot.

423 ft. E of No. 5.
T.D. 3,375 ft.; I.P. 300 bbls. per day.

Magnolia Pet. Co.'s No. 12 Cameron Meadows, 423 ft. E of No. 11.
Rig up.

Burton-Sutton Oil Co.'s No. 4 School Land 2,991 ft. W and 150 ft. N of SE cor. of Sec 16-4s-12w.
Derrick.

CHOCTAW DOME—IBERVILLE PARISH

Standard Oil Co.'s No. 1 Myrtle, 900 ft. N and 550 ft. W of SE cor. of SW¼ of Sec 52-9s-11e.
Rig up.

DOG LAKE—TERREBONNE PARISH

Texas Co.'s No. 11 State, 1,100 ft. N, 2,474 ft. W of SE cor. of Sec. 31-21s-16e.
S.D. 2,014 ft.

Texas Co.'s No. 17 State.
Abd. 6,467 ft.

FOUR ISLE—TERREBONNE PARISH

Texas Co.'s No. 8 La. Land & Expl. Co., 2,177 ft. E, 1,385 ft. S of NW cor. Sec. 24-21s-16e.
Rig up.

Texas Co.'s No. 5 State, 885 ft. S, 2,327 ft. E of NW cor. of Sec. 24-21s-16e.
Location.

GARDEN ISLAND BAY—PLAQUEMINES PARISH

Texas Co.'s No. 13 State, 3,391 ft. S and 1,-604 ft. W of NE cor. Sec. 107-23-32.
Rig up.

GUEYDAN—VERMILLION PARISH

Pure Oil Co.'s No. 6, Alliance Trust, 667 ft. E. 1,787 ft. S line of lease, Sec. 34-11s-1w.
T.D. 9,390 ft.; preparing to drill plug.

HACKBERRY—CAMERON PARISH

Gulf Prod. Co.'s No. 18 Erwin, 271 ft. W and 722 ft. N of SE cor. of Sec. 13-12s10w.
T.D. 6,910 ft.; comp. as gas well.

Texas Co.'s No. 14 State, 500 ft. SE of No. 13, Sec. 13-12s-10w.
Sidetracked 3,456 ft.

Texas Co.'s No. 15 State, Sec. 13-12s-10w.
Coring sand 6,910 ft.

Union Sulphur Co.'s No. 3 Humble (W.O.).
T.D. 6,017 ft.; I.P. 40 bbls. per day.

Yount Lee Oil Co.'s No. 13 Gulf Land, Sec. 14-12s-10w.
Drlg. shale 4,936 ft.

Yount Lee Oil Co.'s No. 1-A Gulf Land, 2,000 ft. S and 50 ft. E of the NW cor. of Sec. 22-12-10.
Rig up.

NEW IBERIA—IBERIA PARISH

Helis' No. 1 Sabatoir, 900 ft. N and 1,210 ft. E. of SE cor. of Sec. 53-12s-7e.
Cmtd. surface csg. 805 ft.

Iberia Oil Corp. and Y. D. Spell's No. 2 Bernard, 150 ft. E of No. 1, Sec. 54-12s-7e.
S.D. 2,846 ft.; salt.

IOWA—CALCASIEU AND JEFF DAVIS

Shell Pet. Corp.'s No. 17 Heyd.
16-in. csg. 62 ft.

Shell Pet. Corp.'s No. 16 Heyd, 990 ft. S, 998 ft. W of NE cor. Sec. 13-9s-7w.
Drlg. shale 6,609 ft.

Shell Pet. Corp.'s No. 4 Tuten, 330 ft. S, 1,819 ft. W of NE cor. SE¼ Sec. 13-9s-7.
Drlg. plug 6,698 ft.

JENNINGS—ACADIA PARISH

Port City Oil Co.'s No. 15 Jennings-Haywood, 108 ft. E, 368 ft. S of NW cor. Sec. 41-9s-2w.
S.D. 1,600 ft.

Yount Lee Oil Co.'s No. 15 Houssiere-Latriele.
Bldg. derrick.

LAKE BARRE—TERREBONNE PARISH

Texas Co.'s No. 36 Lake Barre.
T.D. 2,788 ft.; W.O.C.

Texas Co.'s No. 14 Lake Barre.
P.B. to 3,017 ft.; set whipstock.

Texas Co.'s No. 15 Lake Barre.
Coring 3,507 ft.

LAKE PELTO—TERREBONNE PARISH

Texas Co.'s No. 12 Lake Pelto.
T.D. 6,270 ft.; 7⅝-in. csg. 6,230 ft.; I.P. 20 bbls. of fluid per hr. through ¼-in. choke, 5% B.s. and S.W.

LEESVILLE—LAFOURCHE PARISH

Gulf Prod. Co.'s No. 6 Allen Lane, Sec. 26-21s-22e.
Drlg. sand 3,615 ft.

Gulf Prod. Co.'s No. 12 Bernard, Sec. 26-21s-22e.
Location.

Gulf Prod. Co.'s No. 10 Bernard, 1,322 ft. E. 958 ft. S of NW cor. Sec. 26-21s-22e.
Location.

Emerald Pet. Co.'s No. 10, State, west bank, 200 ft. S of well No. 1.
Location.

Emerald Pet. Co.'s No. 11 State, east bank, 227 ft. N of well No. 1.
Location.

Emerald Pet. Co.'s No. 12 State, east bank, 250 ft. S of well No. 1.
Location.

Texas Co.'s No. 34 La. Land & Exploration Co.
Drlg. shale 3,483 ft.

Texas Co.'s No. 32 Leesville, 890 ft. S, 2,-484 ft. W of NE cor. SE¼ Sec. 27-21s-22e.
Building foundation.

Texas Co.'s No. 33 Leesville, 1,590 ft. S, 2,-434 ft. W of NE cor. SE¼ Sec. 27-21s-22e.
Rig up.

Texas Co.'s No. 36 Leesville, 474 ft. S, 385 ft. E of NW cor. SW¼ Sec. 26-21s-22e.
Derrick.

Texas Co.'s No. 37 Leesville, 1,266 ft. N, 103 ft. W of SE cor. NE¼ Sec. 27-21s-22e.
Rig up.

Texas Co.'s No. 27 Leesville.
Drlg. salt 4,467 ft.

LOCKPORT—CALCASIEU PARISH

Union Sulphur Co.'s No. 6 Moss, located between No. 2 and No. 5 (W.O.).
T.D. 6,668 ft.; set 450-ft. liner; washing in.

PORT BARRE—ST. LANDRY PARISH

Emerson Trotter's No. 3 Sabilie, 650 ft. S, 200 ft. E from NW cor. of Sabilie tract, Sec. 26-6s-6e.
Drlg. sand 2,479 ft.

Port Barre Oil Co.'s No. 2 Sybil, 3,080 ft. N easterly along section line, thence 55 ft. at R/A to the east, Sec. 20-6s-5e.
S.D. 3,762 ft.

ROANOKE—JEFERSON DAVIS PARISH

Classel et al's No. 1 La. Irrigation Mill Co., 695.5 ft. E and 475 ft. N of SW cor. Sec. 1-9s-4w.
Location.

Humble O. & R. Co.'s No. 1 Clayton, 2,233 ft. from S line, 440 ft. from E line, Sec. 10-9s-4w.
Drlg. shale 6,233 ft.

Humble O. & R. Co.'s No. 2 C. N. Taylor, 1,320 ft. E, 440 ft. S of NW cor. of SW¼ Sec. 12-9s-4w.
Rig up.

Humble O. & R. Co.'s No. 1 Nelson Thomas, 880 ft. W of No. 2 Kratzer, 440 ft. N and W of SE cor. of 200-ac. tract.
Drlg. hard sand 9,558 ft.

Humble O. & R. Co.'s No. 2-B Devilbiss, 1,127 ft. W of No. 1-B, 440 ft. S of N line of S½ of Sec. 11-9s-4w.
T.D. 7,934 ft.; I.P. 534 bbls. in 11 hrs.; ⅝-in. choke; T.P. 950 lbs.; C.P. 1,075 lbs.

Shell Pet. Corp's No. 1 Jarnigan, 330 ft. E, 660 ft. S. NW cor. Sec. 12-9s-4w.
T.D. 9,985 ft.; running 7-in. csg.

Shell Pet. Corp.'s No. 1-B Kratzer, 660 ft. N, 330 ft. E of SW cor. of SW¼ Sec. 1-9s-4w.
Coring 8,794 ft.

Shell Pet. Corp.'s No. 4 Kratzer.
T.D. 7,839 ft.; P.B.

SULPHUR—CALCASIEU PARISH

Union Sulphur Co.'s No. 812 fee.
Drlg. rock 1,510 ft.

Union Sulphur Co.'s No. 800 fee.
Rig up.

Union Sulphur Co.'s No. 811 fee.
Drlg. shale 2,003 ft.

Union Sulphur Co.'s No. 3 Kelly.
Abd. 6,018 ft.

WHITE CASTLE—IBERVILLE PARISH

Shell Pet. Corp.'s No. 8 Wilbert.
T.D. 4,652 ft.; prepare to set whipstock.

Shell Pet. Corp.'s No. 1 White Castle Shingle Co., 1,830 ft. W, 100 ft. S from NE cor. of lease.
Fishing 4,406 ft.

Shell Pet. Corp.'s No. 1 Adams, 2,340 ft. N. 100 ft. E of SW cor. of lease.
Coring shale 8,503 ft.

MISCELLANEOUS WILDCATS

TEXAS

AUSTIN COUNTY

Deering & Kayser's No. 1 P. A. McClinton, 1,100 ft. from NW line and C NE and SW of 115-ac. tract in Thomas Bell Sur.
Drlg. shale 1,830 ft.

Paul English et al's No. 1 Felix Guhn, 1,000 ft. S, 360 ft. E from NW cor. of 71-ac. tract, D. Chomel Sur., 1 mile SE of Kinney.
Rig up.

BRAZORIA COUNTY

Amerada Pet. Corp.'s No. 2 Houston Farms Dev. Co., 2,150 ft. SE, 5,800 ft. SW of N cor. of B.B.B.&C. Sur., in the Perry & Austin Sur.
Drlg. shale 3,528 ft.

George Strake's No. 2 Truska, 991 ft. W of No. 1, H.T.&B. Sur., Sec. 7.
S.D. 6,000 ft.

Showers & Moncrief's No. 1 Hughey, 5,500 ft. NW of discovery well, in center of Lot 18, H.T.&B. Sur., Sec. 29, Abst. 292.
Location.

Texas Co.'s No. 1 Freeport Sulphur Co., 2,-764 ft. N, 1 deg., 40 ft. W and 1,134 ft. S, 88 deg., 20 ft. W of NW cor. of S. F. Austin Sur., Abst. No. 35, being in the Conception Areola Sur.
C.O. hole 4,544 ft.

Quintan Pet. Co.'s No. 1-B G. L. Wood, 2,778 ft. from W line and 5,555 ft. from S line of 1,483-ac. lease, Thomas Alsbury Sur.
Prepare to spud.

CALHOUN COUNTY

Continental Oil Co.'s No. 2 American National Realty Co., 660 ft. from NW line, 660 ft. from NE line of Sec. 6, Blk. C, Pedro Garcia Sur.
S.D. 6,522 ft.

CHAMBERS COUNTY

R. A. Mason et al's No. 1 R. M. White, 3,125 ft. N of S line, 466 ft. W of E line of James McGahey Sur.
Drlg. shale 3,084 ft.

COLORADO COUNTY

Clyde Creighton et al's No. 1 Witte, 150 ft. S and E of most westerly NW cor. of H. White Sur.
Derrick.

Coyle & Concord's No. 1 fee, 550 ft. from N line, 1,950 ft. from E line of Sec. 45, I.&G.N. Sur.
Rig up.

Trans State Oil Co.'s No. 1 Frank Weinkuhn, 150 ft. E of W line, 150 ft. S of N line of 150-ac. tract, F. A. Zimmershield Sur.
Cmtd. surface csg. 21 ft.

FAYETTE COUNTY

Lewis Franklin's No. 1 V. Dybala, center of 75-ac. lease, A. Thompson Sur.
Location.

FORT BEND COUNTY

C. B. Bunte's No. 1 Winston, 1,495 ft. E of W line, 2,381 ft. N of S line of 350.6-ac. tract, S. Isaacs Sur.
Location.

W. A. Shafer et al's No. 1 V. B. Bortash, 693 ft. SW of NE line and 1,003 ft. NW of SE line of Sec. 52, H.&T.C. Sur.
S.D. 2,900 ft.

George White et al's No. 1 M. M. Cravins, 1,000 ft. from N, 300 ft. W of SW cor. of survey, B.B.B.&C. Sur. No. 8.
Rig up.

GALVESTON COUNTY

Coast Pet. Co.'s No. 1 Stewart, 3,416 ft. S, 200 ft. E of NW cor. of 143-ac. tract, W. K. Wilson Sur.
Drlg. shale 6,820 ft.

Gillock Pet. Co.'s No. 2 Maco Stewart, 900 ft. N and 150 ft. W of No. 1, Alex Farmer Sur.
T.D. 1,500 ft.; S.D.

GRIMES COUNTY

Hubert Holt et al's No. 1 Simon Fuqua, 1,200 ft. N of S line and 400 ft. W of E line of 177-ac. lease and survey, Moses Evans Sur.
S.D. 3,980 ft.

Dr. Marshall et al's No. 1-B Todd, 300 ft. from E line and 175 ft. from N line of 150-ac. tract in extreme NW cor. of county (25 ft. N of No. 1).
Drlg. shale 2,313 ft.

Patton et al's No. 1 Yeager, 1,000 ft. W of E line, 170 ft. S of N line of 53-ac. tract and survey, A. Russoile Sur., NW of Iola Sur.
S.D. 1,000 ft.

HARRIS COUNTY

Graham & Gardner's No. 1 Hager, 150 ft. out of SE cor. of 736.8-ac. tract, J. W. Clepton Sur.
Drlg. lime 3,000 ft.

Herbert-Still & Hooper's No. 1 Racker, 990 ft. E of W line, 4,290 ft. N of S line of J. C. Ogburn Sur.
Drlg. shale 5,310 ft.

C. C. Foster et al's No. 1 H. K. Johnson, 2,000 ft. from S line and C of E and W lines of G.C.&S.F. Sur.
Drilled 25 ft. and S.D.

Stanolind Oil & Gas Co.'s No. 1 F. J. Burkey, C of Lot 15, Blk. 105, H.T.&B. Sur. No. 5.
Location.

Stanolind Oil & Gas Co.'s No. 1 C. F. Gibson, C of Lot 9, Blk. 41, H.T.&B. Sur. No. 5.
Location

Stanolind Oil & Gas Co.'s No. 1 J. W. Horlow, C of Lot 10, Blk. 82, H.T.&B. Sur. No. 5.
Location

Stanolind Oil & Gas Co.'s No. 1 Ed Wells, C of Lot 3, Blk. 146, H.T.&B. Sur. No. 5.
Location.

Stanolind O. & G. Co.'s No. 1 fee land, 330 ft. S, 300 ft. E of NW cor. of 20-ac. tract Sur., Sec. No. 5.
T.D. 5,000 ft.; 9⅝-in. csg. 4,831 ft.; tested S.W.; P.B. 4,685 ft.; flowed 161 bbls. of net oil in 24 hrs.; T.P. 765 lbs.; C.P. 1,-000 lbs.; killed well to install a lead seal and packer on top of liner to stop a gas leak; now swabbing.

West Prod. Co.'s No. 1 Woodburn, 1,320 ft. E of W line, 2,145 ft. N of S line of survey, A. Whitlock Sur.
Abd. 7,777 ft.

JACKSON COUNTY

A. M. Harris' No. 1 Whitley, 800 ft. out of SE cor. of F. G. Keller Sur.
Location.

JASPER COUNTY

Marathon Oil Co.'s No. 1 Jasper County Lumber Co., 330 ft. out of NE cor. of 176.5-ac. tract 5 miles SE of Jasper, T. C. Holmes Sur.
Rig up.

JEFFERSON COUNTY

Humble O. & R. Co.'s No. 1 J. T. White, 330 ft. out of SW cor. of T.&N.O.R.R. Sur. No. 370.
Location.

Sun Oil Co.'s No. 1 Hebert & Braussard, 6,-890 ft. NW along SW line and 660 ft. NE at right angles to SW line, B. Blackman Sur., Abst. No. 2.
Drlg. sandy shale 1,312 ft.

LIBERTY COUNTY

R. M. Bruner et al's No. 1 N. Bell, 150 ft. from N line and 150 ft. from W line of Bell's 187-ac. tract, H.&T.B. Sur. No. 4.
Rigging up.

Extension Oil Co.'s No. 1 J. A. Lovett, 330 ft. from E and 600 ft. from S line of lease. P. P. Deevers Sur.
S.D. 4,048 ft.

J. W. Frazier et al's No. 2 Lynott & Buffum, 466 ft. from N and E lines of 40-ac. tract in extreme SE part of survey, James Robeson Sur.
Drlg. shale 7,520 ft.

D. H. Furse's No. 1 J. F. Kover, 300 ft. out of SW cor. of 100-ac. tract, J. R. Mayhon Sur.
Location.

Liberty-Independent Oil Co.'s No. 1 J. M. Neal, 3,550 varas from E line and 805 varas from N line of Samuel Strong Sur.
S.D. 4,110 ft.

A. L. Maxwell's No. 1 M. P. Hinciliff, 300 ft. from E line and 1,000 ft. from the N line of survey, H.&T.C. Sur., Sec. 10s.
T.D. 5,486 ft.; D.S. stuck.

Thomas et al's No. 1-A Elcke, 660 ft. from W line and 2,350 ft. from S line of tract in Green Sur.
T.D. 5,047 ft.; 6⅝-in. csg. at 5,029 ft.

Turnbull & Irwin's No. 1 Cox, 1,000 ft. from the E line and 200 ft. from S line of 108.2-ac. lease, F. J. G. Smiley Sur.
Location

MATAGORDA COUNTY

Continental Oil Co.'s No. 1 Feife, J. S. Criswell Sur., 3,000 ft. E of W line, 2,800 ft. N of S line of survey.
T.D. 4,995 ft.; fishing.

Dr. Griffith's No. 1 fee, 3,000 ft. from E line and 3,000 ft. from W line of Wm. H. Bell Sur.
Rig up and S.D.

Helmerich & Payne's No. 1 Hawkins, 850 ft. S, 70 deg. W of Cockburn Oil Co.'s No. 6 Hawkins.
Drlg. shale 2,100 ft.

Horace M. Smith, Inc.'s No. 1 Wadsworth ranch, 150 ft. out of S cor. of Lot No. 5, Blk. S. R. Fisher Sur.
T.D. 3,418 ft.; 7-in. csg. 3,376 ft.; re-setting screen to test; flowing from 5 to 10 bbls. of oil per bay; shut in; may D.D.

MONTGOMERY COUNTY

Travis Baker et al's No. 1 Foster Estate, 1,200 ft. E of W line and 700 ft. S of N line of Blk. No. 50, J. M. De La Garza Sur.
Derrick.

E. E. Bayland's No. 1 C. S. Atkinson, 230 ft. E of T.&B.B. R.R., and 650 ft. S of N line of Robbins George Sur. on 207-ac. tract N of Pinehurst.
Derrick.

Charles B. Gohlson's No. 1 Aaron Parks, 250 ft. from S line, 200 ft. from E line of Parks 139-ac. tract, J. Lindley Sur.
7-in. csg. cmtd. at 3,721 ft.; T.D. 3,773 ft.; flowed est. 5 bbls. per hr. with some brackish wtr.; will P.B. to 3,725 ft.

Paul Sanderson, trustee's No. 1 Texas Long Leaf Lbr. Co., 3,500 ft. W, 1,750 ft. S of NW cor., Wm. Barker Sur.
Drlg. sand and boulders 412 ft.

ORANGE COUNTY

Blue Line Oil Co.'s No. 1 Godwin, Richard Ballew Sur., 300 ft. from E line and 150 ft. from NE line of Godwin 26-ac. tract.
S.D. 2,770 ft.

Ellis Oil Co.'s No. 1 G. W. Pell, 100 ft.

from N and 300 ft. from W line of Pell tract in the J. M. Henerie Sur.
T.D. 2,055 ft.
Dick Schwab's No. 1 East Texas Canal Co., 330 ft. from the N and W lines of 234-ac. tract, John Jett Sur.
S.D. 6,585 ft.

POLK COUNTY

Howard Daily et al's No. 1 Z. B. Knox, 1,450 ft. W and 1,920 ft. S of NE cor. of P. Chairs Sur., 16 miles NE of Corrigan.
S.D. 60 ft.
J. F. Anderson's No. 1 E. L. Duke (O.W.D. D.), 400 ft. from E and 350 ft. from S of SW cor. of P. Michelick 50-ac. lease, Abst. 69, P. J. Mineral Sur.
Waiting on a new mud pump; T.D. 5,304 ft.
J. W. Leggett et al's No. 1 Bergman, C of 294-ac. tract, or 1,100 ft. W of H.E.&W.T. R.R., J. T. Pinkney Sur.
Rig up.
Dick Schwab's No. 1 Lynch, 330 ft. out of NW cor. of 200-ac. tract in the George Jameson Sur.
Location.

REFUGIO COUNTY

Cecil Hagen et al's No. 1 Edith Clarkson, 1,736 ft. from N line, 3,820 ft. from E line of J. Coughlin Sur.
Location.

ROBERTSON COUNTY

H. L. Patton's No. 1 H. Ely, located on a 616-ac. tract, A. Manchola Sur.
Drlg. 3,110 ft.

SAN JACINTO COUNTY

Turnbull & Irwins' No. 1 K. Moore, 5,400 ft. from W line, 1,250 ft. from S line of lease, T. F. De Rumayor Sur.
Coring sandy shale 3,947 ft.
Ralph Sturam et al's No. 1 R. B. Love et al, 475 ft. S of N line and 2,000 ft. W of E line of 177-ac. tract, Drury McGee Sur.
Moving in rig.

TRINITY COUNTY

Gulf Prod. Co.'s No. 3 Trinity County Lbr. Co., 5,772 ft. N along W line of A. E. Westall Sur. A-48 from NW cor. of H. S. and N. G. McGee 165.9-ac. tract, and being the most northerly SW cor. of Trinity County Lbr. Co.'s 2,697-ac. tract and 387 ft. E at R/A to said line.
Location.
Gulf Prod. Co.'s No. 2 Trinity County Lbr. Co., 1,287 ft. S, 1,480 ft. S of the SW cor. of the Stanley & Barrett 99.5-ac. tract, Trinity County School Land Sur.
Abd. 3,006 ft.

VICTORIA COUNTY

Eastern States Pet. Co.'s No. 1 Henderson & Pickering, 330 ft. out of NW cor. of Lot 19, Wm. Rupley Sur.
Fishing.
Costa Oil Co.'s No. 1 Schovjasa, 330 ft. out of N cor. of Lot No. 14, Wm. Rupley Sur.
T.D. 4,790 ft.; P.B. to 4,773 ft.
Eastern States Pet. Co.'s No. 1 Williams, 330 ft. out of S cor. of 130-ac. tract, E. Benavides Sur.
Rig up.
L. A. Gillespie and Superior Oil & Gas Co.'s No. 1 R. W. Brandt, 330 ft. from NE line, 330 ft. from NW line of tract No. 11, Henderson & Pickering Subd., Wm. Rupley Sur.
T.D. 6,031 ft.
L. A. Gillespie and Superior Oil & Gas Co.'s No. 1 John Janis, 330 ft. from SW line of survey and on the SE line of Nancy Dean Sur.
Cmtd. perforated csg. 800 ft.
Magnolia Pet. Co.'s No. 1 Henderson & Pickering, E offset to discovery well, Wm. Rupley Sur.
Drlg. shale 5,674 ft.
E. L. Smith Oil Co.'s No. 1 Henderson & Pickering, 330 ft. out of SE cor. of Lot 75, J. M. Bronson Sur.
Testing showed oil on a D.S. test.

WALLER COUNTY

Diadem Oil Co.'s No. 1 Urban Estate, 1,100 ft. from the N line, 800 ft. from W line of survey.
Drlg. shale 4,376 ft.

WASHINGTON COUNTY

Powers Prod. Co.'s No. 1 Boenker, 550 ft. S, 350 ft. W from NW cor. of Dodson 160 acres, J. Newman Sur.
Drlg. shale 1,810 ft.

WHARTON COUNTY

Texas Co.'s No. 2 Pierce Estate, 2,425 ft. S. 31 degrees 20 ft. E, 4,400 ft. N, 53 deg. 40 ft. E from W cor. of Pierce Estate Land. I.&G.N.R.R. Sur. No. 39.
T.D. 4,704 ft.; reamed to 4,697 ft.; cmtd. 9⅝-in. csg. at 4,697 ft.

SOUTH LOUISIANA
ACADIA PARISH

Continental Oil Co.'s No. 1 T. Ortego, 990 ft. S, 500 ft. E of NW cor. SW¼ Sec. 25-7s-2w.
9⅝-in. csg. at 6,303 ft.; T.D. 6,568 ft.
Humble O. & R. Co.'s No. 1 American Rice Mills, 660 ft. S and 1,320 ft. W from NE cor. Sec. 27-10s-1e.
Drlg. sandy shale and lime at 9,308 ft.

AVOYELLES PARISH

Southern State Pet. Co.'s No. 1 Boyette, 330 ft. N and 330 ft. E of SW cor. Sec. 28-3s-5e.
S.D. 3,887 ft.

BEAUREGARD PARISH

Chew & Kirby's No. 1 Long Bell Lbr. Co., 330 ft. S and W of C of NE¼ Sec. 26-3s-8w.
Drlg. shale 5,420 ft.
Richardson & Martin's No. 1 Southwest Lbr. Location.

CALCASIEU PARISH

Fred Oil Co.'s No. 2 Faizst, 262 ft. E and 83 ft. S of NW cor. SE¼ Sec. 36-8s-10w.
S.D. 3,525 ft.
Fohs Oil Co.'s No. 1 Airhart, 275 ft. W and S of NE cor. SW¼ SE¼ Sec. 14-9s-8w.
Rig up.
Fohs Oil Co.'s No. 1 Wasey, 275 ft. each way out of the NE cor. SW¼ of SE¼ Sec. 12-19s-8w.
Drlg. shale 4,812 ft.
Nicholas McCaleb's No. 1 Grey, 2,200 ft. S 1,200 ft. E of NW cor. Sec. 22-8s-13w.
S.D. 850 ft.
Texas Co.'s No. 5 Nickerson, 2,826 ft. N, 3,192 ft. W of SE cor. of Sec. 12-19s-8w.
Location.
Texas Co.'s No. 6 Nickerson, 287 ft. N, 289 ft. W of SE cor. of NW¼ Sec. 12-19s-8w.
Location.
Texas Co.'s No. 3 Nickerson, 2,739 ft. N. 2,750 ft. W of SE cor. Sec. 12-19s-8w.
T.D. 6,746 ft.; 6⅝-in. csg. 6,734 ft.; I.P. 310 bbls. per day on ⅛-in. choke; T.P. 1,075 lbs.
Union Sulphur Co.'s No. 2 Mayo Reeves.
Drlg. shale 6,894 ft.
Union Sulphur Co.'s No. 7 State, 1,316 ft. N and 199 ft. E of the SW cor. of Sec. 12-9s-3w.
Location.
Union Sulphur Co.'s No. 9 State, NW offset to Texas Co.'s No. 2 Nickerson.
Drlg. sandy shale 6,310 ft.
Union Sulphur Co.'s No. 1 Castle, 326 ft. N and E of NW Sec. 13-9s-5w.
Fishing 6,473 ft.
Union Sulphur Co.'s No. 1 Buhler, 1,465 ft. N and 425 ft. W of SE cor. Sec. 11-9s-8w.
Drlg. sandy shale 6,715 ft.
Union Sulphur Co.'s No. 6 State.
Drlg. shale oil sand 7,517 ft.
Union Sulphur Co.'s No. 2 Powell, 1,279 ft. S, 1,621 ft. E of NW cor. Sec. 12-9s-8w.
Drlg. lime 6,610 ft.
Wheeler Oil Corp.'s No. 1 School Lot, 1,708 ft. E, 1,325 ft. N of SW cor. Sec. 16-9s-7w.
S.D. 3,720 ft.

CAMERON PARISH

Magnolia Pet. Co.'s No. 1 J. B. Broussard, 330 ft. E and S. out of NW cor. of the SW¼ of SE¼ of Sec. 13-12s-9w.
T.D. 7,244 ft.; P.B. from 6,112 ft.; drlg. sand 6,910 ft.
Steinberger Pet. Co.'s No. 1 Drew, 330 ft. out of NW cor. NE¼ of Sec. 26-10s-11w.
Location.

EAST BATON ROUGE PARISH

Superior Oil & Prod. Co.'s No. 1 Duplanter-Community, 1,500 ft. westerly along the N line from the NE cor. of D. A. and E. A. Duplanter's 130.7-ac. tract, thence 330 ft. at R/A.
Sidetracking at 7,646 ft.; T.D. 7,747 ft.

EAST FELICIANA PARISH

Thompson Creek Oil Co.'s No. 1 Fannie Noland, 2,600 ft. E and 1,580 ft. N of SW cor. Sec. 70.
S.D. 1,589 ft.

EVANGELINE PARISH

Basile's No. 1 Haas, 1,680 ft. S of N line, 350 ft. W of E line of NE cor. Sec. 14-6s-2w.
Abd. 6,520 ft.
Little Pigeon Oil Co.'s No. 1 McHugh, 1,300 ft. S, 229 ft. W of the NE cor. Sec. 26-12s-10e.
Moving in.

IBERIA PARISH

Meade Oil Co.'s No. 1 Hamilton, near town of Loze, in the NW cor. of parish.
Derrick.
Texas Co.'s No. 1 State Fausse Point.
Fishing 5,128 ft.

JEFFERSON DAVIS PARISH

Howard Naylor et al's No. 1 Johnson-Bordeaux, 1,734 ft. N, 52 deg. N, 45 min. E, and 1,853 ft. S, 37 deg. 15 min. E out of SW cor. Sec. 39-10s-3w.
Location.

LAFOURCHE PARISH

Southern Sulphur Corp.'s No. 1 D. L. Lagraize, 800 ft. E of NW cor. of Lot 7, thence 250 ft. S of Sec. 26-21s-22e.
Spudded and shut down.

ST. BERNARD PARISH

Emerald Pet. Corp.'s "Shell Beach Properties" No. 1, on S edge of Bayou Louis, Sec. 31-13s-15e.
Drlg. shale 5,810 ft.

ST. MARTIN PARISH

Texas Co.'s No. 7 St. Martin Land, 2,042 ft. N, 500 ft. W of SE cor. of Sec. 17-8s-7e.
Drlg. shale 3,280 ft.

VERMILLION PARISH

Moore Bros.' No. 1 Brussard, 350 ft. S of N line, 250 ft. E of W line, NE cor. Sec. 32-11s-3e.
S.D. 4,056 ft.

La.-Ark. Wildcats

(Continued from Page 78)

O. G. Collins' No. 1 H. L. Hunt, approx. center of Sec. 26-22-13e.
S.W. and abd. 3,303 ft.

JACKSON COUNTY

American Liberty Oil Co.'s No. 1 Lusk, C NE NE Sec. 1-16-1w.
Set 12½-in. 277 ft.

LA SALLE PARISH

H. L. Hunt, Inc.'s No. 1-A King, 225 ft. S, 210 ft. E, NW cor. NE NW Sec. 36-10-1e.
Blowing S.W., 1,524 ft.

MADISON PARISH

San. Land & Exploration Co.'s No. 1 Delta Land Co., Sec. 1-17-12e.
Set 12½-in. 200 ft.; T.D. 280 ft.

MOREHOUSE PARISH

Carbon Consolidated's No. 1 Archie, 560 ft. S, 330 ft. E, NW cor. SW Sec. 22-20-4e.
Set 6-in. 2,086 ft.
Carbon Consolidated's No. 2 Archie, 560 ft. S, 990 ft. E, NW cor. SW Sec. 22-20-4e.
Set 6-in. 2,085 ft.
J. H. Gibson, tr.'s No. 1 Thomas, 330 ft. S and W, NE cor. Sec. 16-22-7e.
Rigging up.
Zeiger & Bacon's No. 2 Crossett Lbr. Co., 3,870 ft. N, 505 ft. E, SE cor. SE SW of Sec. 36, in Sec. 41.
S.D. 50 ft.

OUACHITA PARISH

American Liberty Oil Co.'s No. Golson, C NW Sec. 25-17-1e.
Set 10-in. 174 ft.
G. E. Gordon, tr.'s No. 4 Rea-Green, 1,078 ft. S, 1,122 ft. W, NE cor. SE Sec. 2-18-4e.
Drlg. 2,190 ft.
Pioneer Gas Co.'s No. 1 Filhoil, 2,436 ft. N, 307 ft. W, common cor. Sec. 11-18-4e.
Arranging to test, 2,215 ft.

NATCHITOCHES PARISH

Clyde Crichton's No. 1 Friedman Est., 406 ft. N, 428 ft. E, SW cor. Sec. 52-7-6.
Drlg. 3,422 ft.
Ab Jones' No. 1 Brown Lbr. Co., 400 ft. N. 330 ft. W, SE cor. Sec. 5-10-10.
S.D. 1,033 ft.

RED RIVER PARISH

Sterling O. & R. Co.'s No. 1 Long Bell, Sec. 19-13-9.
Recmt. 6-in. 1,126 ft.
J. S. Tuffree's No. 1 Wilkinson, 1,320 ft. S and W, NE cor. Sec. 11-12-11.
S.D. 1,395 ft.

SABINE PARISH

G. H. Collins' No. 1-C Cranford, 330 ft. S and E, NW cor. SW NW Sec. 28-9-13.
Tested S.W. 2,077 ft.
M. T. Hines' No. 1 J. B. Hill, SW NE Sec. 4-6-11.
S.D. 2,612 ft.
Laurel Pet. Co.'s No. 1 Long Bell Lbr. Co., 330 ft. N and E, SW cor. Sec. 14-8-14.
Dry and abd. 2,402 ft.
Jack Lent's No. 1 Williams, Sec. 13-7-11.
S.D. 1,820 ft.

UNION PARISH

Crescent Drlg. Co.'s No. 1 Woolie, SE cor. NW NW Sec. 34-19-1e.
Coring 1,316 ft.
Southern Prod. Co.'s No. 1 Clark, 500 ft. N and W, SE cor. NW NW Sec. 17-23-1e.
S.D. 900 ft.

ARKANSAS
ARKANSAS COUNTY

Grand Prairie Realty Co.'s No. 2 Fischer, 412 ft. S, 12 ft. W, NE cor. NW NW Sec. 6-6-4w.
W.O. csg. 118 ft.

ASHLEY COUNTY

Glenn E. McFaddin et al's No. 1 Boreine Farms, 660 ft. S and W, NE cor. Sec. 1-18-3.
S.D. 2,300 ft.

COLUMBIA COUNTY

Southern States Gas Co.'s No. 1 Piney Woods Lbr. Co., 330 ft. N and E, SW cor. NE NW Sec. 10-20-22.
S.D. 960 ft.

HEMPSTEAD COUNTY

A. H. Bagnelle's No. 1 Trattner & Rhinehart, Sec. 2-13-26.
S.D. 1,992 ft.
F. W. Martin's No. 2 Lafferty, C NW Sec. 17-14-24.
Rigging up.

LAFAYETTE COUNTY

Kamon & Neely's No. 1 Cockran, NW cor. SE SW Sec. 26-19-25.
Coring 3,940 ft.

MILLER COUNTY

M. D. K. Fitzwater's No. 1 E. H. Beck, 150 ft. N and E, SW cor. NW SW Sec. 34-15-26.
Set 6-in. 2,910 ft.; T.D. 2,917 ft.
Fitzwater et al's No. 1 Norson, SW cor. SE SW Sec. 20-15-27.
S.D. 3,177 ft.
King Oil Corp.'s No. 1 C. H. Schroder, 200 ft. N, 330 ft. E, SW cor. SW NE Sec. 24-14-28.
S.D. 3,167 ft.
King Oil Corp.'s No. 1 Anderson, 350 ft. E, 200 ft. S. NE cor. SW NE Sec. 16-14-27.
S.D. 2,573 ft.
Magnolia Pet. Co.'s No. 8 Olivet, 336 ft. S and W, NE cor. NW NW Sec. 3-16-26.
Set 8-in. 2,930 ft.
Frank Roe et al's No. 1 Frost Est., 150 ft. N and W, SE cor. SE SW Sec. 8-15-26.
Set 10-in. 120 ft.
Lee Timberlake's No. 1 Frost Est., 330 ft. N and E, SW cor. SW SE Sec. 27-15-26.
S.D. 3,100 ft.

NEVADA COUNTY

Carnett et al's No. 1 Floyd Munin, C SW Sec. 16-14-22.
S.D. 50 ft.

OUACHITA COUNTY

F. A. Book et al's No. 1 Arnold, Sec. 24-15-16.
S.D. 2,032 ft.
Snow Black Pet. Co.'s No. 1 O. F. Wyman, NW SW Sec. 36-11-16.
S.D. 590 ft.

SEVIER COUNTY

Pendleton & Vaughn's No. 1 J. E. Johnson, 330 ft. E, 165 ft. S, NW cor. SW Sec. 35-9-30.
Drlg. 1,107 ft.

UNION COUNTY

Gardy Drlg. Co.'s No. 1 Craig, Sec. 35-17-15.
S.D.; W.O. 2,211 ft.
Gulf. Ref. Co.'s No. 49 L. Werner, 4,620 ft. N, 60 ft. E. SW cor. Sec. 5-16-16.
S.D. 6,431 ft.
H. L. Hunt's No. 15 E. F. Gregory, 330 ft. N and W, SE cor. Sec. 10-17-14.
Arranging to blow with air, 3,473 ft.
H. L. Hunt's No. 18 E. F. Gregory, 330 ft. N and E, SW cor. Sec. 11-17-14.
Derrick.
Mrs. R. K. Jones et al's No. 1 Davis, 330 ft. N and W, SE cor. NW NW Sec. 28-16-14.
S.D. 3,202 ft.
Marine Oil Co.'s No. 3-A Union Sawmill, 330 ft. S and W, NE cor. SE SE Sec. 3-18-13.
Dry and abd. 3,588 ft.
McCreaienn Oil Co.'s No. 2 Parker, 420 ft. W, 330 ft. N, SE cor. NE SE Sec. 3-18-13.
Set 10-in. 150 ft.; drlg. 2,720 ft.
C. E. Murdock's No. 1 Pumphrey, C SW NW NE Sec. 11-17-14.
Derrick.
F. F. Roberts et al's No. 1 Galion Lbr. Co., 330 ft. S and E, NW cor. NW SE Sec. 10-16-14.
Set 10-in. 104 ft.

MISSISSIPPI
AMITE COUNTY

Mineral Resources, Inc.'s No. 1 Anderson, C NE NW Sec. 14-3n-3e.
S.D. 550 ft.

BOLIVAR COUNTY

White & Jones' No. 1 Ballou, SE SE NW Sec. 17-24n-7w.
Drlg. 870 ft.

CLARKE COUNTY

L. Beckwith et al's No. 1 Long Bell Lbr. Co., 538 ft. S, 125 ft. W of C Sec. 10-2n-16e.
T.A.; lack of funds.
Clarke County Oil Co.'s No. 1 Dora Butler, C SW SW Sec. 15-2n-16e.
Set 10-in. 63 ft.

HARRISON COUNTY

Big Ridge Oil Co.'s No. 1 Hinzin, NE Sec. 12-7s-10w.
S.D.; W.O. 1,100 ft.

LAUDERDALE COUNTY

Bob Dalton's No. 1 Bounds, Sec. 34-7n-15e.
S.D.; W.O. 1,600 ft.

MONROE COUNTY

P. J. McAlpine's No. 1 Frank Rye, Sec. 15-15s-17w.
T.A. 2,931 ft.
P. J. McAlpine's No. 1 Crook, 1,090 ft. S, 90 ft. W, NE cor. Sec. 15-13s-13w.
S.D. 2,500 ft.

RANKIN COUNTY

Cleve Love et al's No. 1 Ascher, 520 ft. S and E, NW cor. NE NE Sec. 18-5n-3e.
Set 8-in. 735 ft.

SIMPSON COUNTY

Berry Corp.'s No. 2 R. T. Berry, Sec. 33-2n-4e.
O.W.D.D.; S.D. for fuel at 2,510 ft.

WALTHALL COUNTY

Mutual O. & G. Co.'s No. 1 Boyd, SW cor. SW SE Sec. 24-2n-9e.
Abd.; will not drill.

WARREN COUNTY

H. W. Elliott et al's No. 2 R. L. Parker, 780 ft. E, 1,570 ft. S, NW cor. Sec. 14-14n-1e.
S.D.; high wtr. 1,600 ft.

WASHINGTON COUNTY

Perkins & Dees' No. 1 Lee, 1,500 ft. E, 500 ft. N, SW cor. Sec. 33-15n-3w.
S.D. 2,175 ft.

WINSTON COUNTY

Jack Vale et al's No. 1 Moody, 713 ft. N, 667 ft. E, SW cor. NW SW Sec. 3-13n-14e.
S.D. 1,890 ft.

La.-Ark. Proven Fields

NORTH LOUISIANA
CADDO—RODESSA

United Gas Public Service Co.'s No. 2 Caddo Levee Board, 1,126 ft. S, 25 ft. E, NW cor. Sec. 26-23-16.
Rigging up.
United Gas Public Service Co.'s No. 1 D. F. Barr, 1,320 ft. N, 1,551 ft. W, SE cor. Sec. 29-23-16.
Drlg. 4,353 ft.
United Gas Public Service Co.'s No. 1 I. L. Young, C E½ SE Sec. 21-23-16.
Drlg. plug 5,608 ft.

SABINE PARISH—ZWOLLE

Alexander & Crane's No. 1 Fogman, SE cor. N½ SW NE Sec. 18-7-11.
S.D. 2,620 ft.
Ivan A. Allen's No. 1 La. Long Leaf, 330 ft. N and W, SE cor. NW SE Sec. 12-7-11.
S.D. 2,120 ft.
H. C. Mauilding's No. 1 Davis, 350 ft. N and W, SE cor. NE NE Sec. 2-7-11.
S.D. 150 ft.
K. C. Peterson et al's No. 1 Bowman-Hicks, 330 ft. S and E, NW cor. SW NW Sec. 2-7-9.
Derrick down.
Hunter Co.'s No. 16 Sabine Lbr. Co., 2,640 ft. E, 660 ft. N, SW cor. Sec. 12-7-12.
Set 10-in. 60 ft.
Texas Co.'s No. 1 Mary Cutrer, 666 ft. W, 671 ft. N, SE cor. NE Sec. 11-7-11.
Rigging up.
Tex.-La.-Ark. Oil Co.'s No. 1 Pickering Lbr. Co., Sec. 3-3-12.
S.D. 2,742 ft.

EAST TEXAS (BORDER COUNTIES)
HARRISON COUNTY

R. C. Payne et al's No. 1 Lowery, H. D. Spain Sur.
P.B. to 3,524 ft.

MARION COUNTY

Ed S. Holman's No. 1 Henderson, R. Bennington Sur.
P.B. to 2,443 ft.

PANOLA COUNTY

R. A. Graddy's No. 1 M. J. McCormick, J. McAdams Sur.
Moving in rig.
George Hudson et al's No. 1 J. F. Nail, C. McGeary Sur.
Set 8-in. 40 ft.; fishing for core bbl. at 2,345 ft.
Geo. Le Grand's No. 1 P. J. Wardleigh, A. Thompson Sur.
Set 10-in. 62 ft.
R. W. Price's No. 1 Crawford, J. A. Williams Sur.
Set 10-in. 64 ft.
Fred Stovall Drlg. Co.'s No. 1 H. D. Ivey, P. Martin H.R.S.
S.D. for csg. 1,980 ft.

SHELBY COUNTY

Cliff Stoval's No. 1 Pickering Lbr. Co., C. H. Patterson Sur.
S.D.; rig repair. 1,485 ft.

ALABAMA
COVINGTON COUNTY

Geometer Prod. Corp.'s No. 1 Culbreath, SW cor. SW NE Sec. 8-2n-14e.
Drlg. 6,130 ft.

HOUSTON COUNTY

Rice O. & G. Co.'s No. 1 Oakley est., SE cor. NW SW Sec. 9-3n-29e.
S.D. 2,776 ft.

LAMAR COUNTY

DeSoto O. & G. Corp.'s No. 1 Gardner, Sec. 22-15s-16w.
Drlg. 4,318 ft.

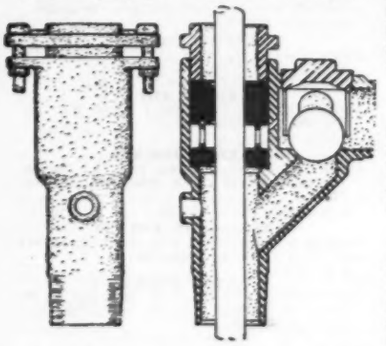
WALTON COUNTY—FLORIDA

Geometer Oil Corp.'s No. 2 Walton Land & Timber Co., Sec. 10-1s-19w.
Drlg. core tests on block; R.U. and S.D.

NEW AND IMPROVED EQUIPMENT

American Christmas Tree Has Only Two Connections

The American pumping well christmas tree, developed and patented by American Iron & Machine Works Co., Oklahoma City, Okla., is a single and simply designed connection for pumping wells, which saves height from top of tubing to



top of stuffing box, is self-oiling, and has removable ball and seat check valve in body. It has only two connections.

Rods may be pulled through the body and packing gland using the packing gland for bell nipple. This christmas tree is strong and, according to the manufacturer, is suitable for supporting long strings of rods. Standard stuffing box packing rings may be used.

This new equipment is made of cast steel to give it long life and to withstand hard usage.

Rotary Packoff Tool Joint Added to Hinderliter Line

The Hinderliter rotary packoff tool joint, announced by the Hinderliter Tool Co., Tulsa, is designed to prevent thread leaks, commonly called washouts. A survey made by field engineers revealed the following problems to be among the most serious and the most common encountered in rotary drilling operations: (1) Abrasion, which imposes tremendous expense, (2) excessive mud and well pressures, and (3) sudden shocks, impacts, structure and thread stresses.

The Hinderliter rotary packoff tool joint contains a fluid seal packing device which consists of steel reinforced cylindrical rubber packing rings placed in the tools joints, and fitted with three packing rings.

This construction, according to the manufacturer, prevents sand particles or mud-laden fluid from entering the threaded section. The rubber pack-off rings conform to the action of the drill pipe with resultant shock-absorbing qualities which restrain and dissipate vibrational energy, thus preventing washouts and reducing twist-offs. The steel reinforced rubber pack-off ring prevents collapse of the cylindrical rubber pack-off packing rings. Packing is partially obtained by the column of fluid which flows through the drill pipe and tool joints.

INSURES COMBUSTION ECONOMY

A new air-operated combustion control which automatically operates boilers to maintain steam pressure, furnace draft and maximum combustion economy has been developed by Bailey Meter Co., Cleveland, Ohio. This new system simplifies central station economy methods and places them within reach of small industrial boiler plants, thereby making it possible for them to operate boilers economically and safely for long periods of time, reducing outage and maintenance.

Among the Equipment Houses

E. D. Wacker has been made assistant general sales manager of C. J. Tagliabue Manufacturing Co., Brooklyn, N. Y., maker of temperature, pressure, flow, humidity, time and level instruments. Sales of the Snapon controller division will be in charge of R. A. Skinner.

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New York Cordage & Cable Co., Inc., has moved its plant and general offices to 91-30 Van Wyck Boulevard, Jamaica, N. Y. The business hereafter will be conducted under the name Rochester Ropes, Inc.

—

Republic Steel Corp., Youngstown, Ohio, with offices in San Francisco and Los Angeles, has entered the California field with its electric resistance weld oil country goods, appointing Ducommun Corp. distributor. Ducommun Corp. is carrying a complete stock of these goods in Wilmington, Calif.

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Lufkin Foundry & Machine Co., Lufkin, Tex., is to erect a new assembly building which, with equipment, will involve expenditure of $50,000 and add 11,000 square feet of floor space.

—

Younger Brothers, Inc., formerly in the Fort Worth National Bank Building, Fort Worth, Tex., have moved to 504 Sterling Building, Houston, Tex.

—

T. A. Canty, Baltimore, Md., distributor of arc welding equipment and supplies manufactured by the Lincoln Electric Co., Cleveland, Ohio, has moved to larger quarters at 1023 Cathedral Street.

—

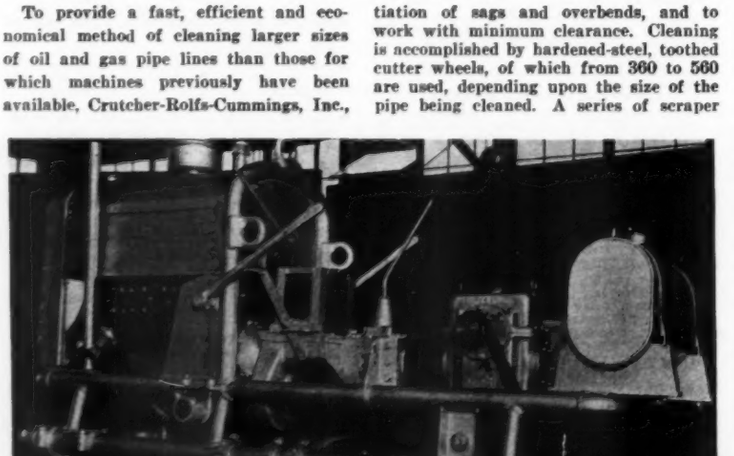
R. E. (Bob) Harris, with the Guiberson sales force 15 years, has been made vice president in charge of sales of Parrish Tool Corp., 1214 South Haskell Avenue, Dallas, Tex., manufacturer of oil savers, packers and swabs.

—

A. A. Dill, export manager of Axelson Manufacturing Co., with offices in New York, has started on a trip planned to include three weeks at the Axelson plant in Los Angeles, Calif., and a tour of the Mid-Continent oil fields.

Machine Is Designed for Cleaning Larger Sizes of Pipe

To provide a fast, efficient and economical method of cleaning larger sizes of oil and gas pipe lines than those for which machines previously have been available, Crutcher-Rolfs-Cummings, Inc.,



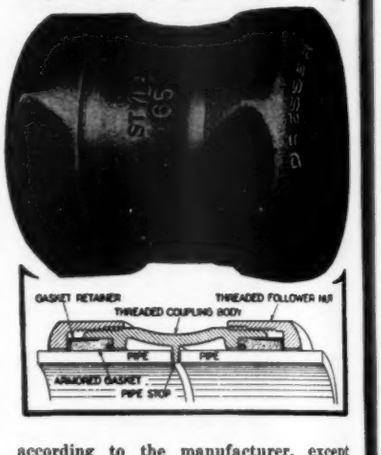
Esperson Building, Houston, Tex., distributors, announce a new W-K-M model D traveling type pipe-cleaning machine. The new model is designed to clean made-up pipe lines from 14 inches to 24 inches in diameter, inclusive. Mounted on a stationary base, the model D may be used also for cleaning single joints of pipe.

Patterned after the Model B, W-K-M pipe-cleaning machine, the model D is equipped with double revolving cutterheads, closely coupled to facilitate negotiation of sags and overbends, and to work with minimum clearance. Cleaning is accomplished by hardened-steel, toothed cutter wheels, of which from 360 to 560 are used, depending upon the size of the pipe being cleaned. A series of scraper knives may be used ahead of the cutters to remove heavy coating or wrapping from old lines. Immediately behind the cutter wheels are a series of steel wire brushes which remove all remaining rust, dirt, etc.

The model D is powered with a V-8 engine with special air and oil filters, and an oversize radiator. Travel along a made-up line ranges from 5 to 25 feet per minute, according to the condition of the pipe.

New Type Pipe Coupling Simplifies Joint Making

Unusual features are incorporated in a self-contained pipe joint announced by the S. R. Dresser Manufacturing Co., Bradford, Pa. To make a connection with this joint, called the Dresser Style 65 compression coupling, nothing is needed,



according to the manufacturer, except the pipe, the joint itself and an ordinary wrench. Plain-end pipe is used, no special preparation of the pipe ends, such as threading, grooving, or flaring, being necessary. Making the joint simply involves inserting the pipe ends into the coupling (which comes assembled) and then tightening two threaded octagonal nuts with a wrench.

The resulting joint is not only permanently tight but absorbs normal vibration, expansion and contraction movements, and permits deflections of the pipe in the joint.

This flexibility with permanent tightness, according to the manufacturer, is made possible by two resilient gaskets that encircle the pipe ends, one gasket around each end. As the nuts are tightened, these gaskets are compressed tightly around the pipe, gripping it with tremendous force and giving a positive seal. The principle involved is essentially the same as that used in other Dresser couplings for the past 50 years.

The pipe need not be cut to exact lengths, joint making in cramped quarters is simplified, repairs on old lines can be made quickly and easily and the joint is suitable for exposed lines because of its compact appearance.

Dresser compression couplings, Style 65, are supplied in standard steel pipe sizes from three-eighths inch to 2 inches inside diameter, inclusive, black or galvanized. They are recommended for all types of services. The gaskets are suitable for temperatures up to 200° F.

Radiant Heat Principle Is Employed by Gas Burner

Utilizing a new application of radiant heat principle, the new N.G.E.-Nelson series 1,000 gas burner for oil-field boilers is announced by the Natural Gas Equipment, Inc., Petroleum Securities Building, Los Angeles.

The burner is a modification of the Venturi tube, and operates upon the principle of entraining a major part of the air required for combustion by the pressure energy of the gas issuing from an orifice into the Venturi throat of the burner. This feature permits operation with less stack-draft.

By use of a refractory bed supported

by the burner, the gas is burned in a restricted and localized zone, so that a condition of incandescence is maintained. This method of heat application causes tremendous acceleration in the rate of combustion and produces a source of heat which is practically without flame. Boilers heat up more quickly when firing is started and cool off slowly when firing ceases. Necessity of a firebrick combustion chamber is eliminated.

Changes Are Announced in Lucey Sales Organization

Lucey Products Corp. has completed arrangements with Murray-Brooks Hardware Co., of Lake Charles, La., whereby the latter will be distributors of Wheland-Lucey manufactured products on the Louisiana Gulf Coast, and arrangements also have been made with Houston Oil Field Material Co., of Houston, Tex., where it becomes distributor for Wheland-Lucey on the Texas Gulf Coast.

In the arrangements, Lucey Products Corp. has sold to Houston Oil Field Material Co. its warehouse at Houston, as well as the warehouse at Sinton, Tex., and all the inventories therein have been acquired by Houston Oil Field Material.

Wheland Co., of Chattanooga, Tenn., which has been making the Lucey slush pump line of equipment for 10 years, also recently announced that it had made arrangements through the co-operation of Lucey Products Corp., whereby a year ago it took over the complete manufacture of all the Lucey line of rotary drilling equipment previously built by Lucey Manufacturing Corp., of Chattanooga, except the Lucey oil country boiler. This business was purchased a year ago by Lucey Boiler & Manufacturing Corp., organized by the then superintendent of boiler production of Lucey Manufacturing Corp., Thomas C. Ervin, and the then treasurer of Lucey Manufacturing Corp., LeRoy C. Train.

By the change in distribution arrangements, many promotions were made. A. C. Willingham, formerly vice president and manager of production for Lucey Manufacturing Corp., became vice president and general manager of Wheland Co. Oliver H. Attridge, formerly chief engineer of Lucey Manufacturing Corp., was transferred to Tulsa, where he assumed charge of engineering for Lucey Products Corp. He will work from the field in conjunction with George E. Campbell, chief engineer for Wheland Co.

Edgar H. Wilson, formerly manager, and T. R. Christian, store manager of Lucey Products Corp. in Houston, were transferred to Houston Oil Field Material Co. W. H. Gillis, manager of Southwest Texas for Lucey Products Corp., assumed the duties of sales and service engineer for Houston Oil Field Material Co. with headquarters in Houston. James O. Ruhl, formerly assistant sales manager for Lucey Products Corp. in Houston, was made sales manager for Wheland Co.

FOR DRILLING SHALLOW WELLS

The Bucyrus-Armstrong 29-W, a larger and more powerful companion of the Bucyrus-Armstrong 33, has been announced by Bucyrus-Erie Co., South Milwaukee, Wis. It was designed to meet the demand for a modern, all-steel, wireline machine capable of drilling depths of 1,500 feet or more, and starting up to 20-inch holes. This machine has been thoroughly tested in the field. It is said to be a profitable machine for drilling shallow oil and gas wells. The 29-W handles a string of tools, with a minimum of maintenance. There is a marked saving of time and expense in moving and rigging up. The machine weighs approximately 15,000 pounds, and may be mounted on a motor truck, or trail behind the truck on pneumatic-tired wheels as a two- or four-wheel trailer unit.

Literature on the Imperial automatic shutoff valve for gravity and vacuum gathering systems and on the Master gauge oil thief is obtainable from W. L. Walker Co., 800 South Main Street, Tulsa.

Notes About Trade Literature

A bulletin on type VS air-compressor units for garages, repair shops and service stations is available from Worthington Pump & Machinery Corp., Harrison, N. J.

The current number of FWD Truck News, published by Four Wheel Drive Auto Co., Clintonville, Wis., contains an interesting article on the use of a portable drilling rig on an FWD truck, which is attracting attention of the oil fields.

A revised handy reference table of S.A.E. analyses and other alloy steels regularly made by Timken Steel & Tube Co., Canton, Ohio, may be obtained by writing that company. Timken has long been active in the development of intermediate corrosion and creep-resisting high-temperature alloy steels.

A bulletin on single-stage split-case centrifugal pumps may be obtained from Gardner-Denver Co., Quincy, Ill.

Herb Smith Equipment Corp., 347 Blossom Road, Rochester, N. Y., will mail to those who ask for it a bulletin describing the Smith hydraulic 3-ton floor jack for handling all types of cars.

Standard appliances for antifriction bearing mountings are the subject of a 12-page looseleaf bulletin obtainable from Bearing Appliance Co., Ardmore, Pa. Engineering information of value is included.

An eight-page looseleaf bulletin distributed by Century Electric Co., 1806 Pine Street, St. Louis, Mo., is devoted to Century 1/6 to 600-horsepower polyphase motors.

Causul metal valves and indicator cock, put on the market by Lunkenheimer Co., Cincinnati, Ohio, are illustrated in a new booklet No. 592 which describes the characteristics of Causul metal for handling fluids of various temperatures and concentrations. The booklet is designed to aid in solving corrosion resistance problems.

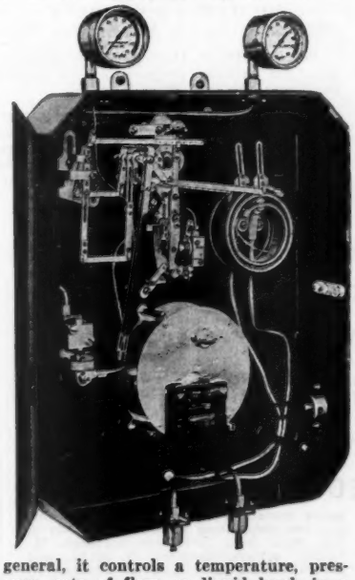
A 96-page forged steel pipe flange catalog issued by Taylor Forge & Pipe Works, Box 485, Chicago, includes sections on flange design, materials, joint bolting and gaskets, a bibliography, dimensional data covering threaded, slip-on, welding neck, Van Stone, blind and reducing types of flanges, ground joint flange unions, orifice flange unions, etc., with tables on American Standard flange facings, pressure-temperature ratings, drilling templates and thread standards.

"A Solution for Paraffin" is the title of a bulletin prepared by Dowell, Inc., Midland, Mich., telling what Dowell paraffin solvent will do.

Staynew Filter Corp., Rochester, N. Y., is sending on request literature describing Protectomotor air filters for compressors, Diesel engines, gas engines, pumps, vacuum lines, etc.

Is Adaptable to Variety of Control Requirements

The new Taylor reset controller, developed by the Taylor Instrument Companies, Rochester, N. Y., incorporates the advantages of the Taylor "Fulscope" control mechanism and can be adjusted to meet a variety of requirements. In



general, it controls a temperature, pressure, rate of flow, or liquid level, in a predetermined relation to some other temperature, pressure, rate of flow, or liquid level. It can be used on all applications where a fixed differential must be maintained between two variables, one of which is under control; or where it is desirable to change the control point of a process in accordance with a predetermined ratio to a secondary process or condition.

The adjustable linkage of this new controller permits control point changes in a great variety of ratios between controlling and resetting systems.

Two types of ratio adjustments are possible, "direct" and "inverse."

Unit Offers Both Roll-On and Free-Wheel Features

An improved hoist model brought out by the Globe Machinery & Supply Co., Des Moines, Iowa, when used in connection with wheel-freeing attachments, offers in one unit features of both a free-wheel and roll-on hoist. The superstructure has the appearance of a roll-on type. It offers the ease of driving on, the generous working space (34¾ inches between channels), the safety, and the other outstanding characteristics of a

roll-on hoist. There are automatic wheel stops at all four corners.

Besides the roll-on features, the hoist gives the operator the advantages of a free-wheel unit through the use of wheel-

freeing attachments which are available with the new superstructure. With one operation the operator can automatically free the front wheels, the rear wheels, or both front and rear wheels at the same time. The wheel-freeing jacks automatically elevate the wheels above the runways, or lower them again, as desired.

The operator does not have to lift the weight of the car. All he does is to raise the wheel-freeing jacks until they engage the axles or spring pads. The wheels are freed when the main frame of the superstructure, with the car resting on the jacks, raises the car a short distance before engaging and elevating the runways.

A circular describing the new gas cleaner or scrubber developed by Fluor Corp., 909 East Fifty-ninth Street, Los Angeles, Calif., may be obtained by writing that company.

Men Well Known in the Equipment Field

L. G. (George) Trembley has been appointed manager of oil country sales for the Ducommun Corp., distributor of Republic electric resistance weld casing and tubing in California. Mr. Trembley formerly was California manager for Axel-

L. G. TREMBLEY

son Manufacturing Co., and until recently was special representative of the Oil Well Supply Co. He recently went to Youngstown, Ohio, where he visited the mills that produce electric resistance weld casing, tubing and line pipe. Returning by way of Texas and Oklahoma he witnessed the setting of several strings of casing.

The appointment of Ducommun Corp. as exclusive distributor marks the entrance of Republic Steel into California. While electric resistance weld oil country goods are relatively new in California they are well known throughout the Mid-Continent and Eastern fields.

Type XPV Compressor Is New in All Except Name

The type XPV steam-driven air or gas compressor announced by Ingersoll-Rand, 11 Broadway, New York, is described by that organization as new in every thing but name.

Boiler plants today seldom are designed primarily to furnish steam for reciprocating-engine-driven machinery. On the contrary, the steam-driven compressor usually is chosen to fit into the existing steam-plant conditions with a view to maintaining the proper steam balance of the plant as a whole. For this reason the type XPV compressor has been developed around a standardized set of frames and running gears. For each of these there has been developed a wide range of sizes of steam cylinders to take care of varying steam requirements.

In addition to the standard 2-stage, 100-pound compressing end for each of these frames, a wide range of sizes and types of compressor cylinders is available to take care of special compressing problems.

New features incorporated for the first time include a box-girder-type frame, bored crosshead guides cast integral with the frame, double-crosshead and tie-rod construction to give a straight-line drive from steam to compressor ends, new type governor, and positive pressure lubrication.

The McCord type C chemical measuring pump, suitable for use in the injection of chemicals into crude oil lines, is described and illustrated in a bulletin obtainable from McCord Radiator & Manufacturing Co., Detroit, Mich.

Kansas Fields

(Continued from Page 71)

had 575 feet of oil in the hole from Siliceous at 3,208-34 feet. It was acidized but not yet tested.

Gypsy Oil Co.'s No. 1 Smith, NE cor. Section 16-20-9w, produced 1,071 bbls. of oil in 24 hours from Siliceous lime at 3,223-29 feet and was then acidized.

Reno County

Olson Oil Co. and Shell Petroleum Corp.'s No. 8 Blake, NW NW SE Section 23-23-4w, in the Burrton Pool, was drilled to Hunton lime at 3,601-09 feet. The well tested 15 bbls. of oil and a lot of water in 15 hours and was plugged back and pipe perforated at 3,340-70 feet, where the well made 38 bbls. of oil and 7,000,000 feet of gas. It was completed. Chat was topped at 3,252 feet and the base of the Mississippi lime was at 3,492 feet.

L. A. Mylius and others' No. 1 Sprowl, a wildcat, NE NW NE Section 1-24-5w, was a failure. It had water in Siliceous lime at 3,958-69 feet and was abandoned.

Allison & Fitzwilliams and others' No. 1 Dukelow, NE NE NE Section 11-22-6w, a wildcat, was rigging up. Dickey Oil Co. and Indian Territory Illuminating Oil Co. made a location for No. 4 Baughman, SW NW NE Section 3-24-4w. Shell Petroleum Corp. was building rig for No. 1 Flory, C SE SE Section 9-24-4w.

Gypsy Oil Co.'s No. 2 Myers, SE NE NW Section 3-24-4w, pumped 904 bbls. in 15 hours from Hunton lime at 3,594-3,603 feet.

McPherson County

McPherson Oil & Gas Co.'s No. 3 Anderson, SE SE NE Section 31-18-2w, in the Chinberg Pool, McPherson County, had Kansas City lime at 2,313-37 feet and it was completed, an 88-bbl. initial producer.

Shell Petroleum Corp.'s No. 7 Decker, 330 feet from south and 1,025 feet from west lines of SE quarter Section 11-19-2w, in the Ritz Pool, deepened from 3,360 feet to Siliceous lime at 3,454-82 feet was acidized and made 65 bbls. of oil and 170 bbls. of water.

T. C. Johnson's No. 1 Good, SE SE NW Section 13-19-3w, deepened from 3,015 feet to Siliceous lime at 3,484-92 feet, filled 600 feet with water and was plugged back to Kansas City lime.

Roth & Faurot's No. 2 Carlson, NW NW NE Section 24-19-3w, was acidized at 2,996-3,004 feet and was flowing by heads, but the quantity of production was not learned.

Shell Petroleum Corp.'s No. 3 Decker, C SE NE Section 11-19-2w, deepened from 2,969 feet to Viola lime at 3,385-95 feet and acidized heavily, pumped 96 bbls. of oil and 120 bbls. of water in 24 hours.

Cowley County

E. B. Shawver made a location for No. 2 Morgan, NW SW NE Section 15-31-3, Cowley County. McNabb & Best were cleaning out No. 1 Roberts, SE NE NE Section 7-33-3, to deepened from 3,499 feet.

Trees Oil Co.'s No. 1 Houser, C SW SE Section 19-30-4, is an estimated 40-bbl. well after a shot at 2,852-63 feet, but was not yet completed.

Sumner County

Winkler & Koch and others were moving in material to start a wildcat test, No. 1 Belsley, SW SW NW Section 2-32-2w, Sumner County.

E. B. Shawver's No. 3 Frankum, NE SE NE Section 32-31-1w, pumped and flowed 487 bbls. of oil in 24 hours from Chat at 3,651-93 feet, which had been acidized.

Shell Petroleum Corp.'s No. 2 Barnes, 220 feet north and 1,072 feet east of SW cor. Section 14-32-2, deepened from 2,112 feet to 2,905 feet, swabbed 575 bbls. of oil in 24 hours and was then acidized. Conglomerate was topped at 2,871 feet and first oil showed at 2,878-88 feet.

CLASSIFIED ADVERTISING

Royalties—Production

HAVE MARKET FOR SUBSTANTIAL PRODUCING ROYALTIES

Exceptionally high immediate return not essential—prefer properties partially developed with excellent future—must be priced right.

We file all requirements with Federal Securities Commission and convert your royalties into cash promptly.

JAMES B. McANALLY
Tulsa, Oklahoma.

PRODUCING OIL ROYALTIES
Bought (Wholesale) Sold.
Inquiries invited from Oil Companies, Bankers, Dealers.
M-K OIL COMPANY, INC.
20 Broad St. New York.

ROYALTY ON several tracts near Pushmataha County and McCurtain County wildcat wells for sale at One Hundred Dollars for half royalty on forty acres. Luther Calahan, Idabel, Oklahoma.

PRODUCING OIL ROYALTY paying monthly income in half acres and upwards at reasonable prices. Federal listed. S. J. Jewell, P. O. Box 35, Tulsa, Okla.

ROYALTY and Leases, Wheeler and Gray Counties, Texas. For quick direct dealers get in touch with
E. B. REEVES,
Lock Box 475, McLean, Texas.

Income Producing Royalties
Mid-Continent Field
Harry A. George
427 Perrine Bldg., Oklahoma City, Okla.

BROKERS — SALESMEN
Sell in the most active area in the United States—The Permian Basin of West Texas and Southeastern New Mexico. From the standpoint of royalty investors this area has much to offer. Can supply you with choice non-producing royalties located on geophysical highs. Also drilling blocks, close in acreage to production, or wildcat leases. I maintain my own field men who cover this area for me. All offerings meet the requirements of the Securities and Exchange Commission. Inquiries invited.
B. D. BUCKLEY
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Royalties—Production

ANDREW J. BARRETT
The Philtower
Tulsa, Oklahoma.

Van—East Texas—Louisiana Royalties Bought—Sold.
WILLIAM MONROE LAYTON
67 Wall St., Suite 1510, New York City.

GULF COAST ROYALTIES
Bought and Sold.
Producing and non-producing royalties in salt dome fields of Texas and La.
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Houston, Texas.

J. A. WOLF AND COMPANY
105 West Adams Street
Chicago, Illinois
Dealers in Oil Royalties since 1918.

OIL REPORT SERVICE
Specimen and Particulars on Request.
OIL INFORMATION BUREAU
501-04 Petroleum Bldg., Okla. City, Okla.

VAN POOL — EAST TEXAS
Bought — Sold — Wholesale.
W. R. Brown & Co., Inc.
14 Prospect St., East Orange, N. J.

HIGH GRADE producing oil and gas royalties offered to dealers. Billie Smallwood, P. O. Box 2261, Tulsa, Okla.

SELECTED producing and drilling royalties, California field. Affiliated Oil Industries, 816 W. 5th St., Los Angeles, California.

DEALERS IN ODD LOTS
EAST TEXAS AND VAN POOL
PRODUCING OIL ROYALTIES
We Buy and Sell.
E. T. MARION REAL ESTATE CO.
401-2 Slaughter Bldg.,
Dallas, Texas.

CALIFORNIA OIL ROYALTIES
Dealers Only
Signal Hill—Huntington Beach
Kettleman Hills
RICHARDS & COMPANY
650 So. Spring St., Los Angeles, Calif.

WRITE W. P. Harley, Bowling Green, Ky., for drilling propositions in proven shallow territory—Turn-Key job.

NEW MEXICO, choice landowners' perpetual royalties in Lea County close to activity under major company leases. Just off the press, Lea County ownership map in 3 parts, $1.00 each. Roy G. Barton, Clovis, N. Mex.

Royalties—Production

PRODUCING OIL ROYALTIES
at Wholesale.
JOHN P. BOOTH
Union Nat'l Bank Bldg.
Wichita, Kans.

BETTER CLASS
MONTHLY PAYING ROYALTIES
Quoted Dealers Exclusively.
W. E. COOK
Suite 812, Palace Bldg., Tulsa, Okla.

Producing Oil Royalties
at wholesale.
ROBERT L. KINKAID, INC.
Petroleum Bldg., Oklahoma City, Okla.

PRODUCING OIL ROYALTIES
for dealers.
H. P. BOWEN
842 Kennedy Bldg., Tulsa, Okla.

PRODUCING OIL ROYALTIES
(ALL FIELDS)
Bought, Sold and Quoted.
HENRY L. BAKER CO.,
207 Van Nuys Bldg.,
Los Angeles, Calif.
Telephone Trinity 7391

I have owned and sold extensive oil royalties and leases in Texas for four years and so far have not owned or sold any leases or royalties that have not produced.

I own and will sell at this time heavily productive royalties in Van and East Texas ranging in price from $400.00 an acre up. I have one forty acre lease in Upshur County, East Texas Field on a three hundred acre farm. Three weeks ago they brought in a good well at the other end of this farm. I will sell this for $200.00 an acre or will entertain a drilling proposition.

I sold a similar forty acres sixty days ago in Upshur County, Texas, and they have since brought in a well on this forty acres making one hundred and forty barrels an hour through the choke. They will drill eight wells on the acreage and its recovery is estimated at 600,000 barrels of oil. When I sold it it did not look any better than the forty acres that I am offering at this time for $200.00 an acre.

I own and will sell ⅛ of the royalty on a 640 acre lease for $4.00 an acre on the edge of Wheeler County over the line in Collingsworth County. The Smith Brothers of McLean, Texas, are now drilling a well on this section. I am informed that the Smith Brothers have drilled a number of wells in this great field without having a single dry hole to their discredit.

I see they brought in a well in Wheeler County about ten days ago making approximately 5,000 barrels.

I own several hundred acres of royalty in Marion County, Mississippi, participating in the rentals under the Sun and Texas Companies. This royalty pays 9⅜% in advance from the rentals. I will sell for $3.00 an acre and pass on to the buyer the rentals which I have already collected for this year. Virtually all of the major companies are making a play in Mississippi, and there are several wells being drilled in the section where my royalty is located.

All of these offerings are subject to prior sale and change of price. Will furnish complete data, geological reports and Governmental reports on any of them inquired for.

I buy royalties and leases in Texas and Oklahoma in any amounts.

P. R. KNICKERBOCKER
3237 Westminster St.
Dallas, Texas.
58-1679.

CALIFORNIA ROYALTIES WANTED
Firm with extensive national dealer following desires tie-up with responsible brokers or operators. Address immediately. Box G-730, The Oil and Gas Journal, 514 Lexington Ave., New York City.

CLASSIFIED DISPLAY RATES

Classified Display Advertising is set with a border and may be used in one or two column sizes. Ten point text capitals are allowed; larger type not accepted.

1 Inch	*1 time*	*$5.00*
1 Inch	*13 times*	*4.50 per inch*
1 Inch	*26 times*	*4.00 per inch*
1 Inch	*52 times*	*3.50 per inch*

This space may be contracted for over a period of one year from the date of the first insertion and is PAYABLE IN ADVANCE, MONTHLY.

CLASSIFIED RATES

Classified advertising rates: First insertion, 35 cents a line; each additional insertion, 25 cents a line. PAYABLE IN ADVANCE. Six words usually make a line. Count as a word each one-letter word and each group of figures. White space computed at regular line rate. Allow two extra lines for blind ads. Ads of less than three lines not accepted. No formal acknowledgement is made, and proofs cannot be shown in advance of publication.

	1 time	2 times	3 times	4 times
3 Lines	*$1.05*	*$1.80*	*$2.55*	*$3.30*
4 Lines	*1.40*	*2.40*	*3.40*	*4.40*
5 Lines	*1.75*	*3.00*	*4.25*	*5.50*
6 Lines	*2.10*	*3.60*	*5.10*	*6.60*
7 Lines	*$2.45*	*$4.20*	*$5.95*	*$7.70*
8 Lines	*2.80*	*4.80*	*6.80*	*8.80*
9 Lines	*3.15*	*5.40*	*7.65*	*9.90*
10 Lines	*3.50*	*6.00*	*8.50*	*11.00*

We reserve the right to withhold all advertising of questionable character. To avoid delay be sure to send remittance with copy. We will set your ad in the smallest amount of space possible and refund all overpayments. One-time insertions will not be run until fully paid. Forms close MONDAY NOON before each issue date.

THE OIL AND GAS JOURNAL
TULSA, OKLAHOMA

CLASSIFIED ADVERTISING

For Sale—Equipment *For Sale—Equipment* *For Sale—Equipment* *For Sale—Equipment*

Dismantling Continental Oil Refinery, Sapulpa, Oklahoma

We offer for sale the entire plant and equipment at salvage prices. Seldom has such late type Topping and Cracking equipment been dismantled. A personal inspection will convince you. Some of the principal items as follows:

2—525 H.P. Babcock & Wilcox Water Tube Boilers, with Superheaters complete with extra equipment for efficient and economic operation. Guarantee insurance inspection. Rating 160 lbs. pressure.

2—National Transit Duplex Steam Hot Oil Pumps—Cap. 185 GPM—1000 lbs. pressure—900° F. Driven by Cross Compound Steam Engine, Condensing type. Pumps like new, original cost about $26,000 each. Will sacrifice at small fraction of new cost for quick sale.

1—Foster Wheeler Tube Still, Cap. 4000 bbls. (24 hrs.) looks like new.

14—Brown Electric Control & Recording Instruments, complete in every detail—Modern type—Equal in every respect to any instrument offered by new manufacturer—A chance to make a big saving.

22—Braun Heat Exchangers from 98 to 1000 sq. ft. surface. Floating head type—1, 2 and 4 Pass. Enough sizes to suit your requirements.

1—Complete Gas Absorption Plant—Cap. 100 bbls. day—Designed to operate up to 60 lbs. pressure—Includes full equipment.

1—Complete Continuous Treater and Doctor plant.

Many other items too numerous to mention such as FRACTIONATING BUBBLE TOWERS, CENTRIFUGAL WATER PUMPS powered by electric motors, AGITATORS, STEAM PUMPS, FIRE PUMPS, FIRE FIGHTING APPARATUS, CONDENSER AND COOLING BOXES, STEEL STORAGE TANKS, CRANE AND WALWORTH STEEL VALVES and FITTINGS, 100 miles of PIPE LINE from ¾" to 12", etc., etc.

WRITE FOR FULL DESCRIPTIVE CIRCULAR

BROWN-STRAUSS CORPORATION

Mail address, P. O. Box 220, Sapulpa, Oklahoma Phone 1476

Home Office and Plant—Kansas City, Missouri.

Dismantling Two Complete Refineries

The Altitude Refinery at Chanute, Kansas, cost over $1,000,000.00 operated until February, 1935. The Marathon Refinery at Boynton, Oklahoma, cost over $2,000,000.00 operated until January 8th, 1934. Will sell all or any items in the plant consisting of 2—1000 bbl. each. Jenkins cracking units, 15,000 bbl. capacity skimming units, 2000 to 2500 bbl. Winkler-Koch pipe still; over 250 pumps of all kinds, pressure, hot oil, centrifugal, etc. All sizes condenser boxes, coils, heat exchangers, complete Carbondale wax plant, two 48", 325 plate wax presses together with all chilling and refrigerating equipment. Two 35 ton Carbondale refrigerating units, complete. Over 1,000,000 barrels of storage capacity, vertical and horizontal, from 100 bbl. to 80,000 bbl. tanks. 100,000 valves and fittings, both high and low pressure, Oakite treated. Over 100 miles of all sizes of pipe, complete laboratory equipment, new repair parts, etc. Inventories furnished on request.

Wire, phone, or write,

W. C. Berry or H. J. Galamba

SONKEN-GALAMBA CORPORATION

64 North Second Street, Kansas City, Kansas.

Steel Storage Tanks—Moved and Re-erected

We own and offer up to 150—55,000 bbl. steel storage tanks where are, or cut down and re-erected your grade at great saving. Special transportation rates established any point in Texas. Over 300 other size tanks from 100 bbl. to 80,000 bbls.

Wire, phone, or write, W. C. Berry.

SONKEN-GALAMBA CORPORATION

64 North Second Street, Kansas City, Kansas.

4—300 amp. Lincoln Engine driven welder. A-1 condition. Stationary type. Service Co., 3732 Cedar, Cleveland, Ohio.

NEW BELTING
at less than wholesale cost!
K. C. PIPE & SUPPLY CO.
Boulder at Cameron, Tulsa, Okla.

FOR SALE: 2—100-Watt D.C.-A.C. Converters. D. C. Oscillating Fans, Sizes eight inch to sixteen inch. Address: Gilliland Producing & Refining Corporation, Gladewater, Texas.

25 K.W. and 40 K.W. Gas Engines, 220 volts, D.C. Two 100 K.W. Gas Engine Generator Sets, 220 volts, D.C. 7x6 Ingersoll-Rand ER-1 Air Compressor. Six-inch Oster Pipe Threading Machine. Also large stock of lathes, pipe machines, milling machines, etc. Send for our list.
Terms to suit.
CINCINNATI MACHINERY & SUPPLY CO.
26 West 2nd St. Cincinnati, Ohio.

Financing

PROSPECTUSES prepared and deals shaped up for registration or exemption under Federal Security Act. Fee basis. John Morris, Seventh Floor, 1237 Market St., Philadelphia, Pa.

MILLER, 604 W. Seventh St., Tulsa, Okla. Prospectus preparation and presentation. General assistance in all marketable matters. Correspondence invited.

Incorporations

CHARTERS — Delaware best, quickest, cheapest, most liberal. Free Forms. Colonial Charter Co., Wilmington, Del.

DELAWARE CHARTERS — Fee small; submitted forms. Chas. G. Guyer, 901 Market Street, Wilmington, Del.

Oil Industry Printing

OIL FIELD LEGAL BLANKS
Leases, assignments, releases, township plat books, well records, etc. Request on your letterhead gets free catalog. Olds Press, 215 East Third St., Tulsa, Okla.

FOR SALE — 120 H.P. Model W.K. Waukesha Motor, A-1 condition. H. E. McMillen, Eldorado, Kansas.

FOR SALE—One 15 K.W.-D.C. 125-Volt Westinghouse Generator Set, directly connected to Vertical Steam Engine, complete price $600.00. Address: Gilliland Producing & Refining Corporation, Gladewater, Texas.

FOR SALE—USED GAS METERS
POSITIVE AND ORIFICE.
Geo. R. Milner, Okmulgee, Okla.

FOR SALE: Two 240 H.P., 180 R.P.M., 3 cylinder Busch-Sulzer Diesel engines in first-class condition with one 187 K W, 240 V, A. C. belt driven generator and direct connected exciter. These engines are now connected together in tandum but could be separated to operate as single units. Will sell either or both units. Price $12.50 per H.P. F.O.B. our plant. STANDARD-TILTON MILLING COMPANY, Dallas, Texas.

Equipment Wanted

WANTED—Second-hand Ft. Worth Spudder, with string of tools. Address Box G-734, The Oil and Gas Journal, Tulsa, Okla.

WANTED — A Heat Exchanger with 1200 Square Feet of heating surface, preferable with 1" tubes, liquid compartment designed for 200 to 300 pounds pressure, steam section for 150 pounds pressure. Address Box G-736, The Oil and Gas Journal, Tulsa, Okla.

WANTED—A used Transit light model equipped for stadia work. Give manufacturer's name and number of model of the instrument. Address Box G-720, The Oil and Gas Journal, Tulsa, Oklahoma.

Mailing Lists

Prospect lists for the sale of royalties and leases. Steadily employed salaried men. Divided by States.

Personal mailing lists for manufacturers who sell to the oil industry. Write us.

OIL INDUSTRY MAILING LIST CO.
P. O. Box 2603 Tulsa, Okla.

Leases—Production

15% NET INVESTMENT
$18,528 rental during next 5½ years from Texas Company lease, pays 15% net on price of $20,000. Play safe against inflation and enjoy a splendid income. Property worth $25,000. Wm. F. Schutz, 311 Navarro St., San Antonio, Texas.

LEASES in proven big gas territory, not condemned for oil, at ten to twenty-five, royalties at twenty to fifty; wildcat ahead of production and between two producing territories at three to ten for lease and six to twenty for royalty in Texas Panhandle or Western Oklahoma should be good investments. Can furnish leases forty acres up, royalty ten acres up. E. B. Reeves, Box 475, McLean, Tex.

NINE LOTS, N.E. Sec. 28, Twp. 13, 3w, Block 19, Glenaire Add. between Oklahoma City and Edmond. Oil and Gas rights are not leased to date. Responsible parties interested address owner. M. L. ROSENBERG, 832 E. Pershing Road, Apt. 62, Chicago, Ill.

GO 50-50 WITH "BUD"
With four chances to win gas or oil in stripper fields. Four producing strata above 800 feet; gas to five million or more and eight cent market. Pipe line and truck oil markets. I furnish leases, drill, give you half. Write for full data, clean-cut, definite.
H. B. Buddenborg, Osawatomie, Kans.

40 ac. NW Sec. 15-17-29, also 40 ac. NW SW Sec. 2-20-28, Eddy Co., N. M. A. R. Hewitt, 1325 Mont., St., ElPaso, Tex.

NEW MEXICO—My weekly scout report furnishes complete and reliable information on New Mexico developments. Send for copy. W. S. Patterson, Santa Fe, N. Mex.

NEW MEXICO Oil and Gas Leases and royalties. Send 50 cents in stamps for new State Oil Map of New Mexico. Roy G. Barton, Clovis, New Mexico.

Help Wanted

WANTED
GRADUATE ENGINEER
with practical experience in production or pipe line work or both. Give all details age, education and experience and approximate salary desired. Position has unusual opportunities. Address Box G-732, The Oil and Gas Journal, Tulsa, Oklahoma.

Situations Wanted

GRADUATE chemist, general refining experience and research assistant; foreign languages; will consider foreign connection. Address Box G-735, The Oil and Gas Journal, Tulsa, Okla.

ENGINEER—w/12 yrs. exp. in design, sales and manufacture of prod. and drlg. eqpt., desires sales or participating manufacturing connection. Field experience and acquaintance through Mid-Continent and Gulf Coast areas. Address Box G-733, The Oil and Gas Journal, Tulsa, Oklahoma.

GENERAL representation for France and Belgium of a Petroleum Co. well placed for export business wanted by Frenchman very well connected with French and Belgium importers, susceptible of doing good trading. First class French and American references. Address Box G-731, The Oil and Gas Journal, Tulsa, Okla.

SALESMAN, 40, fifteen yrs. experience fishing, rotary, cable, production and titles, Tex.-Okla. Now employed. Wish change. B. G., Box 1064, Tyler, Tex.

Male Steno. 10 yrs. exp., age 32, single, seeks work with Oil man or Oil Co. Address Box G-721, The Oil and Gas Journal, Tulsa, Okla.

Patent Attorneys

REGISTERED PATENT ATTORNEYS
United States and Canada
Before disclosing your invention to anyone, send for blank form:
"Evidence of Conception,"
Instructions "How to Establish Your Rights" and complete information FREE!
LANCASTER, ALLWINE & ROMMEL
418 Bowen Building,
Washington, D. C.

Geophysical Services

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Manufacture of Carbon Black

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such as graphite, yet in its dry state it serves as a very effective lubricant for the bearings which support the many feet of screw conveyors necessary to handle the black.

As has been mentioned, the conveying of black is principally done by screw conveyors, which operate at comparatively low speeds, seldom over 30 r.p.m. and due to the slip back of this type of conveyor, it requires from two to three hours to convey the black from the furthest end of the nearest hot-house into the packing bin. In handling black within the packing house this is done by means of vertical conveyor screws, inclined or vertical bucket elevators and by means of the air lift.

Packing Process

The black upon reaching the packing house is always bolted or sifted in various ways to eliminate foreign matter and break up the flakes formed on the channels. Bolting processes usually take one of the following forms: Brushing through a screen by rotating brushes; passing through an attrition mill where a highly revolving set of blades or bars break up the black and force it through a fine screen; blowing the black through a screen by the use of a fan or air blast and by air flotation.

The black, on being bolted, in one of the above forms, next is conveyed to a large bin in which it is agitated by various means to reduce its volume-weight relationship sufficient that it can be packed off in paper bags with a standard screw packer such as is used for sugar and flour.

As is well known, black is one of the lightest of our known pigments. In the state in which it comes from the hot-houses it weighs about 4 pounds per cubic foot. Usually the bolting process further increases its volume to where it weighs but 2 or 3 pounds per cubic foot. Agitation within the binds then reduces this to about 2 pounds per cubic foot as it is packed off in bags for commercial use. Two sizes of packages are used, the smaller one containing 12½ pounds, requires a satchel bottom bag 17½x34 inches, and the larger size bag is 22x38 inches, holding 25 pounds. If the black is to be used in the rubber industry it is usually compressed by means of mechanical plunger type presses or hydraulic presses to half the above volumes. This compressing briquetts the black so that it is easier to handle and occasions less dusting in use. To minimize dusting in handling, the black is always overslipped, using a second bag slightly larger than the packing bag. In the case of compressed black this overslip is made small and is put on as the package comes from the press. Domestic shipments are usually made by stacking the black directly in a car after the car has been paper lined to reduce abrasive friction. Foreign shipments, however, are usually made in wooden or fiberboard cases containing from 150 to 325 pounds net each.

Dustless Black

A very recent development in the processing and handling of black has been to produce what is commonly known as dustless black. Black is taken either from the bolters directly, or from the agitating bins, and processed in such a manner as to produce spherical or granular pellets of a size which will pass through a 20-mesh screen, but will be retained on from a 65 to a 100-mesh screen. These small pellets are agglomerated carbon black in which each particle has been compressed in the treating process such as to adhere together sufficiently that the product can be handled in bulk with little break-down forming dust. This product has the same volume weight as the hydraulically or mechanically compressed carbon black, and finds its use principally in rubber. It has the further advantage that while a great deal of it is still packed for shipment in bags, yet it lends itself readily to being conveyed by standard conveying machinery which enables it to be shipped in bulk in tank cars, and handled in the receiving plants in dustless systems, resulting in cleaner processing and minimizing labor of handling.

The question is often asked regarding the inflammability and fire hazard in the handling of black. It would appear to some that the black would, in all probability, be explosive and dust explosions would result. However, there has been no record of such a thing happening. Carbon black being composed entirely of pure carbon, will burn, and is often times set on fire by friction of bearings in the agitation bins or by friction of flights in packers, and black has been known to stay on fire several days within a paper bag before coming to the surface. It will not burn with an open flame or blaze, but only with a reddish glow consuming the oxygen contained between the particles of black. The production of combustion is very largely carbon monoxide and in fighting a carbon black fire workmen should guard themselves against too much exposure to the fumes if in a closed building.

The compression of carbon black, however, eliminates practically all fire danger, as we have many times tried the experiment of setting the black on fire in a bag and then putting it in a press and we have found that this always extinguishes it completely, so that storage black in general presents a very small fire hazard.

Central West Fields

(Continued from Page 77)

the Frank Aurand farm, Section 6, same township. Frank J. Ellison is drilling No. 1, Leonard Oxley farm, SE NE Section 1, Lockhart Township. Midwest Development Corp. is drilling No. 2 on the Frank A. Schrolucke farm, SW NE Section 18, Jefferson Township.

In Rush County, Clifford King's No. 1 fee farm, Section 1, Anderson Township, is a gas well at 912 feet.

In Martin County, Trinity Oil Co. is drilling No. 1 on the Thompson heirs farm, Section 17, Michell Tree Township. In Jay County, Hunt & Franks are drilling No. 1 on the Bone farm, S half Section 13, Bear Creek Township.

In Dubois County, F. L. Damron is drilling No. 1 on the Joe Schroering farm, SE SE Section 26, Marion Township. L. R. Henley and others are drilling No. 3 on the Jacob Klenck farm, SW NE Section 23, Robinson Township, Posey County.

KENTUCKY

In Warren County, Onsel Brothers' No. 12 on the L. E. Porter farm, in the Browning Pool, near Bowling Green, produced an initial of 2 bbls. from a total depth of 1,073 feet.

In Ohio County, Snowden-McSweeney Oil Co.'s No. 9 in the northwest corner of the Midkiff farm, in the Oak Pool, produced 45 bbls. initial. Sunflower Oil Co.'s No. 8 on the Sally Jones farm, near Oak Station, same county, produced 50 bbls. initial.

SINCLAIR'S NEW YORK OFFICES

NEW YORK, June 24.—Reports that Sinclair Refining Co., owner of the 31-story Sinclair Building at Nassau and Liberty Streets, contemplates moving uptown to Rockefeller Center are current in realty circles. In the public relations department of Rockefeller Center an official stated he had heard nothing of the proposed move. The Sinclair company occupies about 100,000 square feet in its downtown quarters. Its transfer would involve purchase by Rockefeller Center, Inc., of the Nassau Street building, it was said, there being no lease to be assumed.

J. C. KERR KILLED

TRINITY, Tex., June 24.—J. C. Kerr, 45, of Huntsville, production manager in the Kittrell Field for the Sun Oil Co., was instantly killed when his automobile crashed head-on into a loaded freight truck on White Rock Creek bridge.